

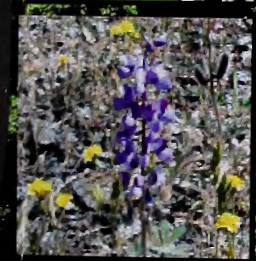


SIERRA RESOURCE MANAGEMENT PLAN and RECORD OF DECISION

February 2008

BLM

Folsom Field Office



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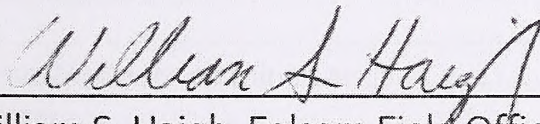
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Bureau of Land Management

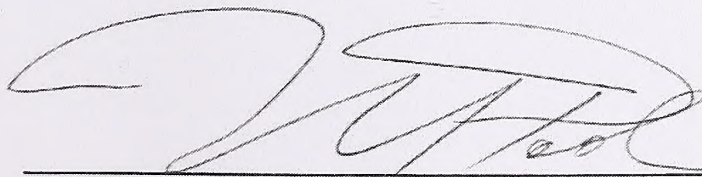
**SIERRA RESOURCE MANAGEMENT PLAN
and
RECORD OF DECISION**

For the
**Folsom Field Office
California**

February, 2008



William S. Haigh, Folsom Field Office Manager



Mike Pool, California State Director

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1.0 Record of Decision

This Record of Decision (ROD) documents the Bureau of Land Management's (BLM) decision to adopt the Sierra Resource Management Plan (RMP). The RMP is nearly identical to the Sierra Proposed RMP and Final Environmental Impact Statement (PRMP/FEIS) published on June 8, 2007. Specific management decisions (including management activities, mitigations and project design features) for public lands under the jurisdiction of the Folsom Field Office are presented in Section 2 of this RMP. This decision considers public comments; the best available scientific and technical information; and results of consultations with federal and state agencies, local governments, Native American tribes, a variety of non-governmental organizations, and numerous individuals. This RMP and its associated environmental impact statement (EIS) were prepared in accordance with the Federal Land Policy and Management Act (FLPMA), the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations for implementing NEPA (40 CFR 1500-1508), and BLM regulations (NEPA Handbook (H-1790-1) and Land Use Planning Handbook (H-1601-1)).

1.1 Changes from the Proposed RMP to the Approved RMP

Additional measures to protect against airborne asbestos have been added to the RMP. To the extent possible and with consideration for other resources, ground disturbing activities in areas with naturally occurring asbestos (NOA) will occur during the wet season to reduce airborne asbestos. During the dry season, areas with NOA may be temporarily closed during ground disturbing activities, water may be applied during road work, and workers will wear personal protective equipment in order to protect workers and the public from airborne asbestos (see Section 2.1).

BLM may consider a 20-acre land exchange in the lone Manzanita area of critical environmental concern (ACEC) (see Section 2.17.1).

Lands in an ACEC may be exchanged within an ACEC for other lands that better represent the values for which the ACEC was designated.

In response to public comments opposed to the Indian River and Ponderosa roads as OHV routes and based upon further review of their suitability as off-highway vehicle (OHV) routes, BLM has decided to limit the Indian River and Ponderosa roads to street legal vehicles only (see Section 2.16).

The Old Mill and Clark roads (approximately ¼ mile long each), which provide access to private land and residences, will be added as designated motorized routes (Map 6a). These roads are near North Columbia, in Nevada County (T18N, R9E, Section 32). Additionally, Eganhoff Lane (T6N, R13E, Section 1) a graded road in Calaveras County with approximately 75' on BLM land will also be added as a designated motorized route because it is used frequently by the public (Map 6e).

BLM will continue to honor Calaveras County Resolutions 97-36 and 97-38b. The BLM parcels identified by those two resolutions will be identified as "public lands to retain" on Map 9.

Objectives to maintain plantations have been omitted from section 2.12, Forestry and Woodlands, and Appendix C, Timber Harvest Criteria. Maintaining plantations would conflict with the objectives of managing forests for late successional/old growth conditions and thinning for forest health.

In order to protect paleo-botanical fossils in the Dutch Flat/Indiana Hill Research Natural Area, the following use restrictions have been added:

- Prohibit camping.
- Prohibit commercial uses.
- Close trails and roads that are impacting RNA values.
- Prohibit development of new trails that could adversely affect RNA values as determined through the environmental analysis process.
- Recommend withdrawing the RNA from mineral entry.

1.2 Alternatives

The goal of developing alternatives was to explore the range of management options for natural resource use and protection in order to find an optimal balance. Alternatives had to: meet the project purpose and need (PRMP/FEIS Section 1.1); be achievable; provide a mix of resource protection, use, and development; be responsive to the planning issues; conform to planning criteria (PRMP/FEIS Section 1.4); and meet federal laws, regulations, and BLM planning policy. Four alternatives were developed for detailed analysis in the Draft RMP/EIS and are summarized below.

Alternative A is the continuation of current management (the no action alternative) and was developed using existing planning decisions, policies and land use allocations. Alternatives B, C, and D were developed with input from public scoping, public workshops, and collaborative work within the BLM interdisciplinary planning team.

Alternative B is the environmentally preferable alternative due to its focus on protection of natural and cultural resource values. Alternative B would have resulted in the greatest number of moderate or major beneficial effects and the fewest moderate to major adverse impacts among the alternatives. 40 CFR 1505.2(b) requires that an agency identify the "environmentally preferable" alternative(s) in the ROD. CEQ has stated that

The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Generally this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources. (CEQ, "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," Federal Register, March 23, 1981: Question 6a.)

Alternative C would have increased public access to and use of BLM lands compared to the other action alternatives. Recreational and consumptive uses (timber/fuel wood production, grazing, mining/minerals, etc.) would have been prioritized.

The Proposed RMP (modified from Alternative D in the draft RMP/EIS) is adopted as the approved RMP. It was developed with input from Native American tribes, state and county governments, other federal agencies, interested organizations, and the public. BLM considers the Proposed RMP the best way to meet the purpose and need of this project, address planning issues, maintain flexibility, and balance resource protection and use. Factors considered when developing the Proposed RMP included: environmental impacts of the alternatives; issues raised throughout the planning process; specific environmental values, resources, and resource uses; conflict resolution; public input; and laws and regulations. The approved RMP is detailed in Section 2 of this document.

1.3 Management Considerations

The approved RMP was designed and selected based on input from other federal agencies, state and local governments, interested groups, Native American tribes, neighboring land owners and other interested citizens. BLM considers the approved RMP as the best approach to meeting the purpose and need of this project, addressing the planning issues, and providing the optimal combination of flexibility and balance in managing resources and uses of the lands in the planning area. Factors considered during this process include: environmental impacts; issues raised throughout the planning process; specific environmental values, resources, and resource uses; conflict resolution; public input; and laws and regulations.

The Federal Land Policy and Management Act (FLPMA) requires that BLM manage public lands to:

- protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values;
- preserve and protect certain public lands in their natural condition;
- provide food and habitat for fish and wildlife and domestic animals;
- provide for outdoor recreation and human occupancy and use;
- regulate the use, occupancy, and development of public lands.

This RMP represents BLM's best efforts to accomplish FLPMA mandates and accommodate a wide variety of diverse community and stakeholder values and uses of the public lands. More specifically, the RMP provides for a range of recreational opportunities (rafting, hunting, recreational driving, hiking, etc.) and consumptive uses (grazing, minerals, timber, etc.) in the areas of highest demand while protecting sensitive resources (water quality, sensitive species, cultural resources, scenic values, etc.) through closures, use limitations, monitoring and the ability to adapt management to future conditions.

1.4 Mitigation

Mitigating measures designed to avoid or reduce impacts are incorporated into the management actions outlined in Section 2. No mitigation measures beyond the decisions outlined in the approved RMP were identified that would be appropriate to further reduce potential adverse impacts; all practicable means to avoid or minimize environmental harm while still meeting the purpose and

need of the RMP have been adopted. Therefore, impacts identified in Chapter 4 of the PRMP/FEIS are unavoidable and may result from implementing the management actions.

1.5 Plan Monitoring

Monitoring is an essential component of natural resource management because it provides information on changes in resource use, condition, processes, and trends. This information allows managers to gauge the effectiveness of BLM activities and strategies. The RMP will be monitored annually or at other appropriate intervals to ensure that management actions follow prescribed management direction (implementation monitoring), meet desired objectives (effectiveness monitoring), and are based on accurate assumptions (validation monitoring). It is not necessary or desirable to monitor every management action or direction. Unnecessary detail and cost can be avoided by focused monitoring of key questions and issues using appropriate sampling methods. The level and intensity of monitoring will vary depending on the sensitivity of the resource and the scope of the management activity (BLM Land Use Planning Handbook Section V, pp. 32-33).

1.6 Public Involvement

The Sierra RMP is the product of extensive work and collaboration with individuals and entities outside the Bureau of Land Management (BLM). Public involvement has been an integral part of this planning process and has allowed BLM to better identify issues and refine our understanding of resource conditions and public expectations. Public involvement is crucial to the success of this plan.

The planning process is an ideal opportunity to incorporate the vast wealth of knowledge held by the public and other organizations into BLM public land management. Public involvement helps identify issues and develop management actions that serve the diverse needs of the individuals and groups who use and value public lands.

Public involvement in the RMP began in late November 2004 and entailed a notice in the *Federal Register* as well as public scoping meetings throughout the planning area. Announcement of these meetings was made through BLM's internet site and mailings to Native American tribes, federal, state and local agencies, interested groups/individuals, and other members of the public. Additionally, presentations were made to some groups such as county supervisors and state agencies. A workshop helped identify socioeconomic concerns and characterize socioeconomic conditions in the planning area.

The draft RMP/EIS became available for a formal 90-day public review period in September 2006 through notification in the *Federal Register*, on BLM's internet site, local newspapers, and through mailings. Four public meetings were held throughout the planning area to introduce the draft plan to the public and solicit additional comments and concerns. As during scoping, BLM made presentations to numerous groups and agencies during the formal comment period to familiarize groups with the RMP and to solicit comments. BLM received more than 2,000 comments during the formal comment period, the large majority of which expressed support for wild and scenic river

designation for several rivers in the planning area. Approximately 70 other letters addressed a variety of issues. Some of the most common issues included special status species habitat protection, fire hazard, land ownership adjustment, motorized route designations, and wild and scenic river recommendations. Details on public involvement are in the PRMP/FEIS (Chapter 5 and Appendix F).

Six self-described letters of protest were received. However, one was deemed not a valid protest because it addressed route designations, which are implementation decisions and are therefore appealable, not protestable (see "Administrative Remedies" below for more information). Another letter was determined to not be a valid protest because it protested decisions that were made prior to the development of the RMP and thus were no longer open to protest or appeal. A third letter was determined not a valid protest because the protesting group had no record of prior participation in the RMP planning process.

Three valid letters of protest were received. One addressed BLM's partnerships with local stakeholders in management of the North Fork American River, including issues such as mining and visual impacts to the river. In its protest response, BLM clarified its responsibilities in the management of the North Fork American River and referenced relevant portions of the RMP that specifically address the protest points.

The second protest letter misread the PRMP regarding plans for the Steven's Trail trailhead. In its protest response letter, BLM clarified the actual management action for the Steven's Trail. In actuality, BLM and the protestor are in agreement regarding the location of the trailhead.

The third protest letter expressed disagreement with BLM's plan to expand the size of the Red Hills ACEC because it may overlap with lands addressed in a preliminary Federal Energy Regulatory Commission (FERC) permit for a pumped storage hydro-power project proposed by two irrigation districts. In its protest response, BLM clarified how expansion of the ACEC is appropriate given that the additional areas meet the same relevance and importance criteria as the existing ACEC, the expansion of the ACEC would enhance BLM's ability to protect the values for which the Red Hills ACEC was designated, and the proponents of the pumped storage facility have not demonstrated that their project is economically viable. For more details on the biological resources in the area addressed in this issue, see Map 5e.

Copies of this plan (hard copy or CD) are available on BLM's internet site (www.blm.gov/ca/folsom) and at the Folsom Field Office (63 Natoma Street, Folsom, CA 95630) or by calling 916.985.4474.

1.7 Administrative Remedies

The RMP includes two levels of decisions: land use planning and implementation decisions. Land use planning decisions were protestable during the June 8 2007 – July 9, 2007 protest period in accordance with BLM regulations 43 CFR 1610.5-2. Six protest letters were received and resolved by the Director of the BLM (see section above for details). These protest resolutions constitute the BLM's final decision on the concerns raised in the protest letters. The Interior Board of Land Appeals (IBLA) does not review appeals from a decision of the Director of the BLM on protests concerning

resource management plans. Those who believe they may be adversely affected by a decision of a BLM official to implement the Sierra PRMP may appeal such action to the IBLA at the time the action is implemented.

There are also implementation decisions made in the RMP (see below). These decisions may be appealed in accordance with the Department of Interior regulations at 43 CFR 4 and 43 CFR 2450. The decisions designating routes of travel for motorized vehicles are implementation decisions and are appealable in accordance with 43 CFR Part 4. The appeal procedures are summarized below. These transportation and access decisions, as described in Section 2 of this document, are effective upon issuance of this Record of Decision, unless a stay of the decision is granted. In accordance with 43 CFR 8342.3(b), public notice of the proposed decision on these routes was provided with publication of a notice of availability of the Sierra Proposed RMP and Final EIS in the *Federal Register* on June 8, 2007 and with a notice of availability of this Record of Decision and approved RMP in the *Federal Register*.

Any party adversely affected by the travel management route designations may appeal within 30 days of receipt of this decision in accordance with the provisions of 43 CFR Part 4.4. The publication of the Notice of Availability of this ROD and approved RMP will be considered the date the decision is received. The appeal should state the specific route(s), as identified in Chapter 2.16 Travel Management of the RMP, on which the decision is being appealed. The appeal must be filed with the Folsom Field Manager, at 63 Natoma Street, Folsom, CA 95630.

The appeal may include a statement of reasons when the notice of appeal is filed, or the statement of reasons should be filed within 30 days after filing the appeal. A copy of the appeal, statement of reasons, and all other supporting documents must also be sent to the Solicitor, U.S. Department of the Interior, 2800 Cottage Way, Suite E-1712, Sacramento, CA 95825.

The statement of reasons is filed separately, it must be sent to the Interior Board of Land Appeals, Office of Hearings and Appeals, 801 N. Quincy Street, Suite 300, Arlington, VA 22203. It is suggested that any appeal be sent certified mail, return receipt requested.

To request a stay of the decision pending the outcome of the appeal, a motion for a stay must be filed in the office of the authorized officer at the time the appeal is filed and must show sufficient justification based on standards under 43 CFR 4.21:

1. The relative harm to the parties if the stay is granted or denied.
2. The likelihood of the appellant's success on the merits.
3. The likelihood of immediate and irreparable harm if the stay is not granted.
4. Whether the public interest favors granting the stay.

2.0 Sierra Resource Management Plan

2.1 Air Quality

Goal

Protect air quality related public health, safety, and sensitive natural resources.

Objectives

Contribute to the attainment of air quality standards in all air basins and air quality districts.

Minimize air pollution and airborne hazards.

Management Actions

Cooperate with local counties and contribute to attainment of air quality standards in the Mountain and Valley Air Basins.

Comply with National Ambient Air Quality Standards, California State Ambient Air Quality Standards, State Implementation Plans, and applicable federal, state, and local air quality regulations.

Approval of all actions that require permits from the local air pollution control districts (APCDs) would include measures necessary for the phased reduction of pollutants in accordance with the Air Quality Attainment Plan for the local air basin. This would include authorizations for construction, road maintenance and improvement, mineral development, and OHV authorizations.

Management actions will conform to the objectives and strategies of local APCDs for attainment of federal and state air quality standards.

Mitigate ground-disturbing activities and prescribed fire projects to reduce the generation of particulate matter.

Require smoke management plans for all prescribed fires.

Coordinate prescribed fire activities with the appropriate air district. Prepare required smoke management plans and permit applications and submit them for approval.

Post signs to inform users when an area contains more than 0.25% naturally occurring asbestos (NOA) or where airborne NOA is at hazardous levels. Coordinate these actions with appropriate federal, state, and local agencies.

Avoid, where possible, ground-disturbing activities on soils with NOA. These activities may include but would not be limited to recreational facility development, road, recreational trail and logging skid trail construction, etc. These areas will be identified during site-specific project planning.

To the extent possible and with consideration for other resources, ground disturbing activities in areas with NOA will occur during the wet season to reduce airborne asbestos. During the dry season, areas with NOA may be temporarily closed during ground disturbing activities, water may be applied during road work, and workers will wear personal protective equipment in order to protect workers and the public from airborne asbestos.

2.2 Soil Resources

Goal

Maintain appropriate biological and physical characteristics based on soil type, climate, and landform.

Objectives

Maintain soil cover and organic matter.

Maintain soil productivity and stability and provide for restoration where elements are below potential.

Minimize harmful consequences of erosion and surface runoff using such tools as water bars, dips, sediment traps, etc.

Preserve and protect the tertiary oxisol soil formation.

Management Actions

Stabilize erosion on Truro Mine, Rewinkle, and Boulder Mine roads.

Stabilize OHV trail erosion on the Bald Mountain parcel.

See the Lands and Realty Section for actions and decisions related to land acquisition for soil resources.

2.3 Water Resources

Goal

Restore and maintain the ecological health of watersheds and aquatic ecosystems on BLM lands and, to the extent possible, partner with other landowners and stakeholders to coordinate restoration efforts across watersheds.

Objectives

Maintain and improve surface water and groundwater quality consistent with applicable state and federal water quality standards and to help meet the needs of downstream beneficial uses.

Maintain or improve stream channel conditions, including channel integrity/stability, balanced sediment transport, and channel bed material mobilization/distribution.

Ensure seasonal discharge fluctuations that follow the natural hydrograph for duration, magnitude, rate of change, and frequency to meet resource objectives for aquatic species.

Provide water to facilitate authorized uses. BLM's objectives during FERC relicensing include maintenance or improvement of the following (relevant RMP sections containing greater detail are in parentheses):

- Meadow and wetland habitat (2.4); riparian and aquatic habitat for all life stages of native fish, macroinvertebrates, other aquatic species, and special status species (2.5).
- Stream channel conditions (integrity, morphology, bed loads, sediment, flow etc.) and the natural hydrograph (2.3).
- Water quality to protect downstream designated beneficial uses (2.3) and aquatic species habitat (2.5).
- Noxious weed control (2.4).
- Large woody debris (frequency, size, and distribution adequate for channel complexity/stability) (2.5).
- Visual resources (2.10).
- Wilderness and wild and scenic outstandingly remarkable values (2.19).
- Recreation (adequate flows for boating, fishing, swimming, etc.) (2.15).
- Roads, trails, and recreation facilities (2.16, 2.15).
- Reduced fuel hazard (2.7).
- Protection/interpretation of cultural resources (2.8).

Management Actions

In addition to numerous smaller hydroelectric relicensing projects, anticipated major Federal Energy Regulatory Commission (FERC) projects involving BLM, including:

- Don Pedro Pumped Storage and reservoir (Tuolumne River)
- Angels Hydroelectric (North Fork Stanislaus)
- Conjunctive Use Hydroelectric (Mokelumne River)
- Parshall Canal (North Fork American)
- Mokelumne (North Fork Mokelumne)
- Bear River Canal (Bear River)
- Utica Hydroelectric (North Fork Stanislaus)
- Tulloch Hydroelectric (Stanislaus River)
- Stanislaus-Spring Gap Hydroelectric (Stanislaus River)
- Upper American River (South Fork American)
- Bear Drum-Spalding Hydroelectric (South Yuba)
- Merced River – Exchequer Reservoir

Conduct management actions in a manner that conforms to State Water Resources Control Board objectives developed as required by the Federal Water Pollution Control Act. Best management practices will be developed as needed in accordance with BLM guidance and policy.

Remediate water quality contamination from sources on BLM land.

Coordinate with at least one watershed organization in each assessment area to work on water quality issues.

Remediate the mercury hazard at abandoned placer gold hydraulic mine sites as needed to comply with the Clean Water Act and to prevent public exposure to mercury-contaminated sediment classified as a California hazardous waste (22 CCR 66261.24).

Coordinate water quality and quantity issues with those who rely on water for downstream beneficial uses.

Inventory roads and trails for erosion potential and repair sites based on funding and opportunity, such as through community based planning.

Inventory mining areas for erosion and discharge of toxins such as mercury in the South Yuba River area, and control effects as needed.

2.4 Vegetative Communities

Goals

Promote a healthy and diverse mix of plant communities and provide a wide spectrum of organisms and ecosystem processes for the needs of plants, animals and humans.

Maintain the ecological integrity of foothill ecosystems in the face of urban growth and residential development through protection or improvement of habitat connectivity.

Objectives

Conserve and restore oak woodland, conifer forest, chaparral, riparian, meadow, Central Valley wetland, and grassland habitats to support long-term viability of native bird species, sensitive species, and the associated natural diversity of these habitats.

Manage vegetation (including invasive species removal) to improve habitat conditions for particular wildlife species.

Control invasive species and increase native plant species using early detection, rapid response, and prevention measures.

Reduce hazardous fuels to prevent catastrophic wildfire.

Management Actions

See the Lands and Realty Section for land acquisition decisions related to vegetation.

See the Fire Management Section for fuel reduction actions/priorities.

Improve habitat condition for special status species through vegetation treatment in Central Valley wetlands, oak woodlands, coniferous forests, grasslands, riparian forest, and riverine habitats. Vegetation treatments include but are not limited to water management (including wetland irrigation), prescribed fire to reduce understory brush in conifer and hardwood forest areas, prescribed fire in grasslands to promote native species, removal of invasive species in riparian forests, brush and tree mastication for conifer forest health, and propagation of native plants to restore native plant communities.

Prevent, eliminate, and/or control undesired non-native vegetation or other invasive species using an Integrated Pest Management approach that combines biological, cultural, physical, and chemical tools to minimize economic, health, and environmental risks.

Improve riparian vegetation as outlined in the South Yuba River Comprehensive Management Plan.

Use prescribed fire, mechanical mastication, herbicides, manual removal, seeding, propagation, and planting or combinations of these methods to promote healthy, diverse vegetation communities.

Implement and meet national BLM policies consistent with the Partners Against Weeds Initiative (DOI 1998) and Executive Order 13112.

Continue weed inventory, control, and monitoring. Prioritize weed treatment in habitat for special status species and high use recreation areas. Control and eradicate invasive species in important habitat for special status species. Invasive species management in ACECs, special status species habitat, and other environmentally sensitive areas will be designed to prevent or minimize damage to rare biological resources. Herbicide use will only occur if the rare resource is threatened by an invasive plant species, other weed control alternatives are unavailable or ineffective, and if rare resources can be protected from herbicide damage by buffers or other protective measures. The selectivity of an herbicide will not be relied upon to prevent impacts to a special status plant species, unless no other protective measures are available, and herbicide testing in a small area demonstrates that the special status species is unaffected. For listed species, Section 7 consultation will precede any such test.

Conduct water management on designated wetland management units in the Cosumnes River Preserve. Water management consists of periodic irrigation and control of water levels on managed public wetlands to achieve desired habitat for wildlife endemic to the Central Valley.

Construct fences, change season of use or take other actions to prevent livestock grazing from damaging riparian areas.

2.5 Fish and Wildlife

Goals

Maintain, improve, or enhance native fish and wildlife populations and the ecosystems upon which they depend.

Maintain the ecological integrity of foothill ecosystems in the face of urban growth and residential development through protection or improvement of habitat connectivity.

Provide opportunities for research and education.

Objectives

Restore disturbed or altered habitat for all life stages of native wildlife species, aquatic species, macroinvertebrates, special status species, and native fish species, including spawning fish passage habitat.

Maintain or improve numbers of native fish, macroinvertebrates and other aquatic species.

Provide for adequate large woody debris (size, frequency and distribution) within the natural range of variability to contribute to stream channel complexity and stability.

Maintain or improve desired native plant communities while providing for wildlife/fisheries needs and soil stability.

Reduce habitat fragmentation and maintain altitudinal migratory corridors (approximately 1,500-3,500').

Prevent and control infestations of non-native species that negatively impact native and game species.

Management Actions

See Lands and Realty Section for fish and wildlife related decisions to land acquisition.

Allow lethal control of non-native wildlife species that are adversely impacting native species.

Use Partners in Flight focus species to determine relative health of key habitat for birds in the 0-3,500' elevation zone. Work with agencies and conservation entities to maintain and enhance these habitats.

Identify, maintain, and enhance deer herd altitudinal migratory routes through land acquisition and consolidation of public land patterns along the migratory routes. In addition, conduct enhancement through vegetation manipulation to achieve desired habitat condition for important deer herd areas. The important foothill routes are in the 1,500-3,500' elevation range. Connectivity and size are important. Work with agencies and conservation groups to maintain and enhance migratory routes for deer and other terrestrial animals.

2.6 Special Status Species

Goals

Ensure all management activities and BLM authorizations are consistent with the conservation needs for special status species.

Manage special status species habitat to assist in the recovery of listed species.

Objectives

Maintain or improve habitat for special status species.

Coordinate with the USFWS on implementation of recovery plans and conservation strategies for special status species.

Promote the recovery of listed species and improve the status of candidate and special status species to eliminate the need to officially list these species.

Management Actions

Preserve and protect species (and their habitats) that have been given special status by either BLM or the State of California. BLM will coordinate as often as possible with CDFG and other state and local government agencies to accomplish this action.

Implement the Spivey Pond Management Area Plan.

Revise the Red Hills ACEC Management Plan to address current issues, outline management for lands acquired expressly for addition to the ACEC, and update the special status species list for the ACEC.

Develop a Pine Hill Preserve Management Plan that directs management activities toward the Pine Hill Preserve's mission to conserve in perpetuity the rare plant species and plant communities of the western El Dorado County gabbro formation.

Address newly emerging threats to federally listed and other special status species, such as the spread of the pathogen *Phytophthora cinnamomi*, which threatens the remaining stands of federally listed lone manzanita.

Where rare plants occur near public land boundaries, prioritize cadastral surveys and informal boundary delineations based on threats to, or rareness of, special status species. Determine the public land boundary location in relation to the Kanaka Creek Layne's butterweed population. Implement conservation strategies developed in coordination with the USFWS and NMFS for BLM special status species (PRMP/FEIS Appendix B).

Designate Spivey Pond as an ACEC for the protection of the California red-legged frog. Also see Special Designations Section (2.19).

Designate the Pine Hill Preserve ACEC for special status plant protection. Also see Special Designations Section (2.19).

Designate the Cosumnes River Preserve ACEC. Also see Special Designations Section (2.19).

Designate the Deadman's Flat ACEC for special status plant protection. Also see Special Designations Section (2.19).

Designate the Bagby Serpentine ACEC for rare plant protection. Also see Special Designations Section (2.19).

Expand the Red Hills ACEC to include lands acquired for addition to the ACEC and other lands in the Red Hills east of Don Pedro Reservoir that support a similar suite of special status plants. Also see Special Designations Section (2.19).

Expand the Limestone Salamander ACEC to include lands with known limestone salamander occurrence or habitat. Also see Special Designations Section (2.19).

Expand the Lone Manzanita ACEC to include nearby or adjacent lands that support special status species of the Lone Formation. Also see Special Designations Section (2.19). Measures to remediate toxic mine waste at Poison Lake would be allowed as long as they do not impair the values for which the ACEC was designated. Prevention of the spread of the *Phytophthora cinnamomi* pathogen would be paramount.

2.7 Wildland Fire Ecology and Management

Goals

Establish a cost-efficient fire management program commensurate with threats to life, property, public safety, and resources.

Use prescribed fire to maintain or enhance ecosystem health, water quality and to meet other management objectives.

Help communities at risk in the wildland-urban interface (WUI) develop plans for risk reduction.

Cooperate with regional partners in fire and resource management across agency boundaries.

Reduce human-caused fires especially in developed areas such as communities, campgrounds, and transportation corridors.

Suppress wildfire to protect life, property and resources.

Allow fire to be restored to meet resource management objectives.

Objectives

Wildfire suppression

- Provide for firefighter and public safety in all fire management activities.

- Respond appropriately to all wildland fires, emphasizing firefighter and public safety. ACECs, SRMAs, WSAs, wild and scenic rivers (designated or recommended), and certain other BLM lands will require modified suppression techniques to protect known values. Modified suppression techniques are identified in the FMP.
- Limit the intensity of fire suppression efforts to the most economical response consistent with the human and resource values that are at risk.
- Protect sensitive biological, cultural, and paleontological resources from damage by fire or fire suppression.
- Work with CDF to suppress 90% of all wildfires to less than 10 acres.

Fuels management

- Reduce the risk of wildfire in WUI communities.
- Reduce the risk of catastrophic wildfire through fuels management.
- Use prescribed fire, mechanical, and biological treatments to reduce fuels and promote ecosystem diversity and resilience, control invasive species, reduce fuel hazard, improve wildlife habitat, increase water yield, and enhance watersheds.
- Balance fuel reduction objectives with public safety and air quality.

Fire rehabilitation, stabilization, and restoration

- Allow natural rehabilitation where possible. Rehabilitate burned areas to mitigate adverse fire effects on soil, water, cultural resources, and vegetation.
- Consider scenic values, risk of weed infestation, resource issues and species diversity when determining appropriate site rehabilitation.
- Use native species. Non-native species will be considered only in cases where unacceptable resource damage would occur without replanting the site and native species are unavailable.

Prevention, risk mitigation, and education

- Increase public knowledge of fire's natural role in the ecosystem and the hazards associated with living in the WUI.
- Educate the public on fire safety and prevention.

Management Actions

Continue to implement and maintain the Folsom Field Office FMP based on the goals and objectives in this PRMP. This plan is available at BLM's Folsom Field Office.

Conduct fuel hazard reduction treatments to create fire-safe communities, protect private property, achieve resource management objectives, and restore ecosystem health.

Use prescribed fire to reduce fuel hazard.

Coordinate fire suppression with habitat management goals in the Limestone Salamander ACEC.

Aggressively suppress wildfire with a goal of limiting 90% of all wildfires to less than 10 acres.

Use suppression methods that have the least impact on the environment.

Reduce heavy fuel loading by treating (prescribed burning, vegetation mastication, or manual treatment) at least 500 acres each year.

Implement modified or constrained suppression in the Inimim Forest, Round Mountain area, all wild and scenic river corridors, Merced River Wilderness Study Area, Pine Hill Preserve, and all ACECs. Suppression constraints will focus on avoiding or minimizing soil disturbance in sensitive areas, riparian corridors and near special status species and cultural resources; avoiding use of fire retardant chemicals in sensitive areas; and ensuring resource advisors are present in such areas during suppression activities.

Implement full suppression in all other areas.

Reduce hazardous fuels in WUI areas and communities at risk. Prioritize fuel hazard reduction projects specified in community based plans. Prioritize fuel reduction projects to benefit both communities at risk and significant natural and cultural resources.

2.8 Cultural Resources

Goals

Identify, preserve, and protect significant cultural resources and ensure they are available for appropriate uses by present and future generations.

Reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflicts with other resource uses.

Objectives

Prevent or resolve conflicts between land uses and cultural resources.

BLM will make a reasonable and good faith effort to identify and consider significant cultural resources that could be affected by BLM activities. BLM will avoid, minimize, or mitigate adverse effects to significant cultural resources.

Identify and protect Native American graves (and associated funerary objects), and significant cultural resources subject to the National Historic Preservation Act, Archaeological Resources Protection Act, and Native American Graves Protection and Repatriation Act.

Plan for appropriate uses of cultural resources. These uses pertain specifically to cultural resources and not to areas of land (Table 2-1).

Table 2-1 Cultural Use Allocations and Desired Outcomes

Use Allocation¹	Desired Outcomes
a. Scientific use	Preserved until research potential is realized
b. Conservation for future use	Preserved until conditions for use are met
c. Traditional use	Long-term preservation
d. Public use	Long-term preservation, on-site interpretation
e. Experimental use	Protected until used
f. Discharged from management	No use after recordation; not preserved

¹ Most cultural properties will be in categories a and f. The less common properties, categories b-e, are typically associated with specific locales and will likely require close attention to balance their uses with other resource uses.

Management Actions

All cultural resources on BLM land will be allocated to the uses listed in Table 2-1 according to their nature and preservation value.

Create a trailhead for the Stevens Trail near Colfax. This trailhead will be in addition to the existing trailhead location.

Acquire easements for Stevens Trail

Increase protection by preventing surface-disturbing activities at cemeteries, graves, and other human burial sites. Specifically protect graves at Railroad Flat along the Merced River.

Develop an interpretive program for cultural resources in the South Fork Yuba Comprehensive Management Plan area.

Develop a preservation plan for the Excelsior Ditch as mandated by the South Yuba River Comprehensive Management Plan.

Develop an interpretive program for cultural resources in the South Fork American River Management Plan area.

Close the driveway to the Ophir Mine, near Arrastraville.

Restore 2 miles of the Blue Wing Trail.

Prohibit BLM activities that would degrade the viewshed and setting of the Westside and Cherry Valley Railroad Trail, near Tuolumne City. BLM will regulate trail use to preserve the integrity of this historic-era railroad resource. Maintain the interpretive panel.

Prohibit motorized use in the Campo Seco and Rancheria town site parcels.

Develop a management plan and cooperative agreement with El Dorado County for the monitoring and protection of Indian Diggings.

Develop interpretive materials for the Indian Diggings Cemetery (exclude archeological resources from this interpretation).

Obtain permanent legal access to the Schroeder Mine. Nominate this mine to the National Register of Historic Places.

Preserve and interpret the Davis-Randolph Mill and obtain permanent legal access.

Close motorized access to the Longfellow Mill, near Big Oak Flat, until the mill site can be made safe for the public.

Develop interpretive information for the public in the Merced River area.

2.9 Paleontological Resources

Goal

Identify, preserve, and protect significant paleontological resources and ensure they are available for appropriate uses by present and future generations.

Objectives

Reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resource uses.

Expand opportunities for scientific study, interpretation, and other educational uses of paleontological resources. Of concern are significant paleontological localities with high scientific research potential.

Management Actions

Protect paleontological resources by assessing threats to these resources and identify criteria or use restrictions to reduce or eliminate threats and mitigate impacts.

Designate the Dutch Flat/Indiana Hill Research Natural Area (Map 5a) and institute the following the following use restrictions:

- Prohibit motorized use except for research and administrative purposes.
- Prohibit camping.
- Prohibit commercial uses.
- Close trails and roads that are impacting RNA values.
- Prohibit development of new trails that could adversely affect RNA values as determined through the environmental analysis process.
- Recommend withdrawing the RNA from mineral entry.

2.10 Visual Resources

Goal

Protect and enhance the scenic qualities and visual integrity of the characteristic landscapes in the planning area.

Objectives

Maintain the existing visual quality of the following areas:

- Animim Forest Management Plan area.
- South Yuba River Comprehensive Management Plan area and SRMA.
- North Fork American Wild and Scenic River and SRMA).
- South Fork American River Management Plan area and SRMA).
- Clark Mountain area, along the South Fork American River.
- Pine Hill Preserve.
- North/Middle/Main Cosumnes River.
- Cosumnes River Preserve.
- Mokelumne River (all forks)
- New Melones Reservoir/Stanslaus River area (including the South Fork Stanislaus and Stony Gulch).
- North Fork Tuolumne River.
- Turnback Creek area.
- Red Hills ACEC.
- Lake Don Pedro/Highway 49 view shed.
- Lake McClure/Highway 49 view shed.
- Merced Wild and Scenic River.
- North Fork Merced River.
- Merced River WSA

Designate the following Visual Resource Management (VRM) Classes:

Class I

- North Fork American Wild and Scenic River corridor and SRMA.
- Clark Mountain area along the South Fork American River.
- North/Middle/Main Mokelumne River.
- Tuolumne Wild and Scenic River corridor.
- North Fork Tuolumne River.
- Merced Wild and Scenic River corridor
- North Fork Merced River.

Class II

- South Yuba River Management Plan area and SRMA.
- Inimim Forest Management Plan area.
- Pine Hill Preserve.
- North/Middle/Main Cosumnes River
- Cosumnes River Preserve ACEC.
- South Fork American River Management Plan area (excluding Clark Mountain area).
- New Melones Reservoir /Stanislaus River (including the South Fork Stanislaus River and Stony Gulch).
- Red Hills ACEC.
- Lake McClure/Highway 49 view shed.
- South Fork Mokelumne River.
- Turnback Creek area.
- Merced River WSA, excluding the Merced Wild and Scenic River and North Fork Merced.

Class III

- Lake Don Pedro/Highway 49 view shed.
- All other BLM areas not specifically identified as having a particular VRM rating.

Design surface-disturbing projects to meet VRM objectives. Mitigate or prohibit surface-disturbing actions that do not meet VRM objectives.

Complete visual contrast ratings for new projects to ensure compliance with VRM objectives.

Complete visual contrast ratings for existing roads and facilities, and identify opportunities to reduce visual impacts through modification or rehabilitation.

Complete inventory of existing and potential key scenic vista points along road and trail corridors.

Ensure developments do not detract from scenic integrity by working with counties, agencies, and other entities with management jurisdiction.

2.11 Cave Resources

Goal

Protect and maintain significant cave resources.

Management Action

Inventory, document, and evaluate cave resources in limestone formations on BLM lands in the planning area. Complete a geospatial survey of the entrance to Crystal Palace Cave to determine its location in proximity to BLM and USFS land.

2.12 Forestry and Woodlands

Goal

Manage all forests and woodlands under the principles of multiple use, sustained yield, and protection of the environment in accordance with federal laws, regulations, and policies.

Objectives

Focus on the ecological condition of forests and woodlands, expressed in terms of forest health and characterized by such factors as age, structure, composition, function, vigor, and resilience to disturbances from extensive insect and disease epidemics, catastrophic wildfires, or other factors.

Encourage natural processes of growth and decay to reestablish late- succession/old growth forest conditions, such as multi-layered canopies, large snags and downed logs, large-diameter trees, and organic matter-rich forest floors.

Management Actions

Update and refine forest and woodland inventories as part of community based/activity level planning. Implement and maintain Forest Vegetation Information System.

Conduct timber harvests in accordance with guidelines in Appendix C of the PRMP/FEIS.

Manage BLM forests in the San Juan Ridge area in accordance with the 'Inimim Forest Management Plan (old growth management).

Manage BLM forests in the Round Mountain Area in accordance with the Round Mountain Management Plan (old growth management).

Manage BLM forests in the Iowa Hill Area in accordance with the intent of the draft Iowa Hill Forest Management Plan (old growth management).

Salvage harvest timber damaged from disease, insects, fire, etc.

Manage forests for late succession/old-growth conditions.

Thin for forest health, fuels reduction, and special status species habitat.

Develop allowable harvest levels and available commercial timber through community based planning and resulting implementation plans.

Develop new community based plans as proposed or initiated by communities.

2.13 Livestock Grazing

Goal

Manage livestock to achieve the four fundamentals of rangeland health:

- Watersheds are properly functioning;
- Ecological processes are in order;
- Water quality complies with state standards; and
- Habitats of protected species are maintained or enhanced.

Objectives

Ensure soils exhibit functional biological and physical characteristics appropriate to soil type, climate, and land form.

Maintain or enhance healthy, productive, and diverse populations of native species, including special status species.

Ensure riparian/wetland vegetation and structure and associated stream channels and floodplains are functioning properly, achieving an advanced ecological status, or making significant progress toward these conditions.

Ensure surface and groundwater quality complies with California or other appropriate water quality standards. In areas not available for livestock grazing, allow prescriptive grazing on an as-needed basis for weed control, fuel reduction, and habitat management.

Management Actions

In areas not available for livestock grazing, allow prescriptive grazing on an as-needed basis for weed control, fuel reduction, and habitat management.

Reduce or terminate authorized grazing preference if there is excessive soil erosion or poor range conditions to provide forage for wildlife or to enhance recreational use.

Change authorized grazing preference and/or season of use to meet or make progress toward meeting standards established by the Central California Standards and Guidelines for Livestock Grazing (dated June 2000).

Direct range improvements at resolving resource concerns, improving wetland/riparian areas, overall vegetation/ground cover, and water quality, and meeting or making significant progress toward meeting standards.

Temporarily suspend grazing use on lease areas where monitoring has shown special status species are being adversely impacted by grazing. In some cases, permanent cancellation may be warranted.

Make unavailable for livestock grazing allotments with less than 25 AUMs upon relinquishment of current leases. Special circumstances may preclude the relinquishment of a few of these leases. Manageability of the remaining leases will be analyzed on a case-by-case basis. This analysis will include size and validity of the lease, resource conditions, and economic considerations of both the lessee and BLM. There are 3,615 acres of BLM land that will no longer be available, with a reduced allocation of 327 AUMs. There will be 55,296 acres of land available for livestock grazing in 32 allotments with an allocation of 5,396 AUMs. See the executive summary for a comparison of acres and AUMs by alternative.

Based on site-specific environmental review, consultation with affected parties and agencies, and compliance with other laws and regulations, the two Red Hills grazing allotments (Poor Man's/Apling and Engler) may become unavailable for livestock grazing:

- Upon voluntary relinquishment to promote conservation of special status species (federally threatened Layne's butterweed and California verbena; BLM sensitive Red Hills ragwort, Congdon's lomatium, Red Hills soaproot, and Rawhide Hill onion); or
- If data suggests livestock grazing is causing adverse impacts to special status species.

2.14 Energy and Minerals

2.14.1 Leasable Minerals

Goal

Allow for exploration and development of oil and gas resources.

Objectives

Minimize impacts to other resources.

Ensure lands disturbed by exploration and drilling activities are reclaimed.

Determine appropriate entry and development scenarios for lessees.

Management Actions

Issue oil and gas leases in areas with a high potential for development of natural gas as follows:

- Lease under Standard Stipulations areas that do not require special stipulations.
- Lease under Timing Limitation Stipulations areas that have sensitive seasonal wildlife habitat.
- Lease under Controlled Surface Use Stipulations lands acquired by other federal agencies. Obtain concurrence from these agencies before leasing.
- Lease under the No Surface Occupancy Stipulation lands in SRMAs, special management areas (ACECs, wild and scenic rivers, the Merced River WSA), areas with special status species, and areas with significant cultural resources.
- Lease lands in the “No Leasing” category should they become subject to the drainage of federal gas deposits by wells in adjacent privately owned mineral estate. Lease under the No Surface Occupancy Stipulation.
- Prohibit leasing of lands in national wildlife refuges, incorporated cities, or areas zoned for residential use.

2.14.2 Locatable Minerals

Goal

Provide opportunities for the exploration of locatable mineral resources, location of mining claims (including mill and tunnel sites), and mining of locatable mineral deposits.

Objectives

Minimize impacts to other resources.

Ensure lands disturbed by mining and mineral exploration are reclaimed.

Management Actions

Implement surface management and occupancy regulations 43 CFR 3715 and 3809. The storing of personal property, equipment, and other items on a mining claim for more than 14 days in any 90-day period, even if not associated with residential occupancy, will not be regarded as casual use (43 CFR 3809.5 Casual Use (2)).

To protect resource values from impacts associated with mining claim operations, establish all areas with special designations as special status areas, as defined in 43 CFR 3809.11. Claim operations that would exceed the level of casual use in these areas or in areas known to contain federally proposed or listed threatened or endangered species or their proposed or designated critical habitat may only proceed under a BLM-approved plan of operations.

Recommend mineral entry withdrawals on those BLM lands with special designations. New operations on preexisting claims in the South Fork American River Management Plan area and elsewhere on lands withdrawn from mineral entry may not exceed casual use unless valid existing rights are verified through a validity determination conducted by BLM mineral examiners (43 CFR 3809.100). Operations under previously accepted Notices or approved Plans of Operations may continue without verification of valid existing right if they do not interfere with the purposes of the withdrawal.

Conduct patent (validity) examinations if/when the moratorium on accepting mining claim patent applications is lifted.

2.14.3 Salable Minerals

Goal

Provide opportunities for the exploration and orderly development of mineral materials in the planning area.

Management Actions

Complete reclamation of mineral material sites per the terms and conditions of the permit.

Allow, without a permit, collecting for personal use up to one cubic yard (two pickup loads) of sand, gravel, rocks or other mineral materials per year using only hand tools. Mechanized earth-moving equipment will not be allowed. Collection within special areas (including but not limited to ACECs and Wild and Scenic Rivers) will not be allowed. Collection of archaeological or paleontological resources (i.e., petrified wood, plant impressions, ammonites, crinoids, etc.) will also be prohibited.

Dispose of all mercury recovered during the processing of construction aggregate (sand and gravel) deposits in which a gold recovery circuit is used, per the terms and conditions of sales contracts or free use permits.

Limit mineral material sales and free use permits to existing pits and to sites where only minor impacts to other resources will occur except in the Yuba Goldfields, which will be available for mineral material sales and free use permits. Sales of material will be used for the restoration of wetland and riparian habitat on BLM lands. In general, priorities would be to reclaim areas closer to waterways first, followed by outer portions of the floodplain and uplands. However, reclamation may occur in other areas first as opportunities become available.

2.15 Recreation

Goals

Ensure the continued availability of outdoor recreational opportunities while protecting other resources and uses.

Ensure adequate river flows for boating, fishing, swimming, etc.

Objectives

Develop recreation management strategies for large blocks of BLM land in wild and scenic river corridors.

Develop recreation sites that meet public health and safety standards.

Mitigate conflicts between competing uses.

Maintain existing visitor center, campground, trail, and day use facilities to accepted BLM standards.

Manage recreation for a remote experience on the wild segments of the North Fork American, Tuolumne, and Merced rivers pursuant to the Wild and Scenic Rivers Act.

Terms and Definitions

Special Recreation Management Areas (SRMAs) focus on producing specific recreational opportunities.

Extended Recreation Management Areas (ERMAs) are all BLM lands outside of SRMAs. ERMA management is largely custodial.

Non-motorized Recreation: white water rafting, hiking, backpacking, bird and wildlife viewing, equestrian use, environmental education, sightseeing, picnicking, photography, hunting, shooting, and other non-motorized activities.

Mechanized Recreation: cycling, mountain biking, hang gliding, and rock-climbing using assistive mechanical devices such as bolts, ascenders, etc.

Motorized Recreation: Off-highway vehicle (OHV) use and car touring.

Recreation Opportunities Spectrum (ROS): The ROS identifies broad categories of recreation activities and experiences in the SRMAs. Identified recreation opportunities can be administered by managing the setting, facilities, signing, level of management presence/law enforcement, and types of access to these areas. ROS terminology has been customized to fit the scattered land pattern in the planning area's river corridors. The definitions and categories are directed toward summer, peak use, and water or trail-oriented activities. Other recreation activities may be important and equally valued, but may not require ROS characterizations for management purposes. Recreation opportunities for SRMAs are organized into three major categories:

High use areas: opportunities for high levels of social interaction (high levels of use with people in close proximity).

Transition areas: opportunities for moderate levels of social interaction (moderate levels of use with people in close to moderate proximity).

Remote areas: opportunities for low levels of social interaction, with a focus on appreciation for and a sense of solitude or remoteness.

Management Actions

Recommend the following BLM supplemental rule: Shooting will not be allowed in the direction, or within 150 yards, of any human-occupied dwelling, house, residence, barn, or other outbuilding used in connection therewith. Shooting will not be allowed in the direction, or within 150 yards, of trails or other recreational developments, transmission towers, telecommunications structures, and other facilities on BLM land. Shooters are responsible for understanding gun safety and finding BLM land that is appropriate and safe for shooting, including land where there is minimal ricochet potential and suitable backstops to prevent continued bullet/projectile travel.

Designate the following SRMAs, each of which contain high use, transitional and remote use areas (Maps 4a-d):

South Yuba River SRMA

- BLM lands in this half-mile wide river corridor are managed in accordance with the South Yuba River Comprehensive Management Plan. Lands outside the corridor are intensively managed for recreation use in accordance with the Round Mountain and 'Inimim Plans, where they overlap with the SRMA.
- Firearms use is prohibited in the South Yuba River corridor in accordance with the South Yuba River Plan. Firearms use is permitted in other portions of the SRMA where it does not conflict with the Round Mountain or 'Inimim Management Plans.

North Fork American River SRMA

- Manage in accordance with the North Fork American River Wild and Scenic River Management Plan.
- Improve and develop parking areas and access points in high use and transitional areas.
- Allow target shooting unless signed closed.
- Allow commercial uses through special recreation use permits.
- Prohibit motorized recreation.

South Fork American River SRMA

- Manage in accordance with the South Fork American River Management Plan and its amendments, including the Cronan Ranch Plan.

- Limit equestrian use to designated trails.
- Limit mechanized and motorized use to designated routes.
- Prohibit target shooting.
- Limit hunting and camping to designated areas.
- Allow commercial uses through special recreation use permits.
- Expand the trail network.
- Increase public access.
- Develop facilities for interpretation and sanitation.

Merced River SRMA

- Manage in accordance with the Merced River Wild and Scenic Management Plan.
- Manage for white water and other types of recreation.
- Prohibit discharge of firearms in the half-mile wide Merced River corridor.
- Limit motorized use to street legal vehicles on the Merced River campground access road.
- Prohibit suction dredging on the designated wild segment, except on mining claims that predate the river's wild and scenic designation and have approved plans of operations.
- Prohibit camping on the south side of the Merced River unless BLM gives written permission.
- Build/support development of a non-motorized trail between Bagby and El Portal.

ERMAs:

- Manage for air quality, significant biological and cultural resources, watershed protection, and public health and safety.
- Limit camping to 14 days within a 90-day consecutive period.
- Prohibit cutting of live vegetation and firewood in developed recreation sites.
- Allow recreational suction dredging through permit only.
- Allow hunting and target shooting unless the area is signed closed.

2.16 Transportation and Access

Goal

Provide for appropriate levels of motorized, pedestrian, equestrian, and mountain bike uses commensurate with other uses and resource protection.

Management Actions

Close the Merced River WSA to motorized use, in accordance with BLM Interim Management Policy for Lands under Wilderness Review.

Designate the rest of the planning area as limited to motorized use (vehicles are permitted on designated routes only). User created trails are not allowed.

Closed routes and areas may be authorized for use on a case-by-case basis after appropriate environmental review.

Motorized use may be allowed outside of designated routes for "any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved" (43 CFR 8340.0-5(a)(3)).

Motorized use in important wildlife habitat will be restricted seasonally (spawning beds, deer ranges, raptor nesting areas, etc.).

Criteria for closing motorized routes:

- The route is not critical for accessing BLM land.
- The route is on BLM parcels too small to accommodate this use. There are no viable circuits, loops, or route systems, and impacts to adjacent private property (trespass, noise, environmental damages, etc.) are reasonably foreseeable.
- Air, soil, watershed, cultural, paleontological, or biological resources (including ACEC values) could be damaged by motorized use.
- It is not feasible for BLM to maintain routes.
- Closing the route will prevent dumping, occupancy trespass, and other illegal activities in areas with a history of public land abuse and where there is insufficient law enforcement patrol. Human-caused wildfire ignition could also be reduced.
- The route was created without BLM authorization.

Criteria for designating motorized routes:

- The route provides important access to BLM land.

- The route has been used as an important through-road for decades.
- Opening the route will not threaten air, watershed, soil, cultural, or biological resources.
- The route is on a large enough BLM parcel to accommodate motorized use. Impacts to adjacent private land are not anticipated.

Improve access for the historic Blue Wing trailhead and restore 2 miles of the Trail.

Coordinate with El Dorado County to establish a non-motorized trail system from Bucks Bar to Mount Aukum or the Grizzly Flat area.

Support the Hetch Hetchy rails-to-trails project.

Reconstruct and maintain the North Fork Merced foot trail.

Support the Mokelumne River Coast to Crest Trail.

Establish road closure criteria for the Merced River campground access road.

Close to motorized use the following roads or areas:

- Burnt Flat Road.
- Truro Mine Road at the North Fork American Wild and scenic river boundary (0.25 miles from the south bank of the river).
- Western States Trail.
- Maintain closure of the Red Hills mitigation road.
- All unauthorized access points into the Merced River WSA and designated Wild segment of the Merced River.
- Unauthorized road between the North Fork Merced and Lake McClure near Bagby.
- All roads on the Bald Mountain parcel.
- Rancheria townsite parcel.
- Campo Seco parcel.
- Driveway to the Ophir Mine in Arrastraville.
- Road to Governor/Live Oak Mine.
- Close and rehabilitate or no longer maintain roads leading to the North Fork American River from the north.
- Rewinkle Road.

Limit motorized use to designated routes (Maps 6a-g). Routes on BLM land not shown as designated on these maps will be closed to motorized use by the general public unless the route is:

- A public road/highway maintained by the county or state.
- A public highway as determined by state law regarding public easements.
- Part of an official BLM parking area at a trailhead, boat launch, etc.

Limit the Indian River and Ponderosa roads to street legal vehicles only.

Undesignated routes may be used with written BLM authorizations (e.g., rights-of-way) or by BLM and its contractors for administrative purposes.

Interim designated routes (Maps 6a-g) will be open to motorized use. However, these routes may be considered for closure following future environmental review.

2.17 Lands and Realty

Goals

Develop a public land pattern which enhances resource values and uses.

Respond to demand for land use authorizations.

Objectives

Manage BLM lands to support goals and objectives of other resource programs.

Adjust 15,000 acres of BLM land and private land through acquisition or disposal over the next ten years. This could result in a net gain, loss, or no net change.

Lands and realty actions are divided into four groups: land ownership adjustments, land use authorizations, withdrawals/classifications, and access.

2.17.1 Land Ownership Adjustment

Management Actions

BLM lands not identified for retention will be available for disposal on a case-by-case basis when they are determined to meet the disposal criteria identified in the Federal Land Policy and Management Act (see below).

Prior to disposal, a site-specific analysis must determine that disposal will serve the public interest and the lands:

- Contain no significant recreation, biological, cultural, or other values the loss of which could not be mitigated
- Have no overriding public values
- Are typically not within or adjacent to a special designation area
- Represent no substantial public investments (including part of a water or power development).

Land within ACEC boundaries will generally be retained. But in those instances where a land exchange involving the disposal of land within an ACEC would result in a land ownership pattern that will better conserve the resources the ACEC was designed to protect, such an exchange can occur. This could occur if BLM acquired through the exchange lands appropriate to add to the ACEC (lands of more conservation value than those transferred out of federal ownership).

Provide lands to government entities through sale, exchange, or Recreation and Public Purposes Act sale or lease when the lands identified conform to the disposal criteria.

BLM has accepted the donation of the Chung Wah Chinese cemetery in Folsom, CA. BLM will honor the donor's request that these lands be retained in federal ownership.

Work with local government to dispose of sanitary landfills and transfer stations currently authorized under Recreation and Public Purposes Act sales and leases.

Resolve unauthorized land uses. Permits, leases, ROWs, sales or exchanges (in conformance with disposal criteria) may be considered to resolve trespass.

Acquire lands in existing and recommended wild and scenic river corridors. All land acquisitions will only be conducted with willing sellers.

Settle title disputes and facilitate saleable mineral development, reclamation, and public use in the Yuba Goldfields through land exchanges, sales, or other appropriate means. This may include, if appropriate, the acceptance of management responsibility of federally owned lands in the Yuba Goldfields through a transfer from the Army Corp of Engineers.

Convey mineral interest on lands designated for potential disposal that are determined to have low potential for mineral development.

Retain lands in designated or recommended Wild and Scenic River corridors, ACECs, SRMAs, areas with critical watershed values adjacent to major water bodies, areas withdrawn for water projects, lands with significant cultural resources, and lands with special status or state listed species. Other lands meeting the disposal criteria in Section 203 of FLPMA will potentially be available for disposal, subject to site-specific NEPA analysis, criteria common to all alternatives, and other requirements. Lands shown on Map 9 are identified for retention; therefore, the balance of lands (subject to the process and criteria common to all alternatives) will be available for potential disposal.

BLM anticipates considering a future land exchange in the Lone Manzanita ACEC that would consolidate BLM parcels and further protect the values for which the ACEC was established. For more information, see Section 2.19.2.3, ACECs.

Acquire Central Valley wetlands. Work with the Central Valley Joint Venture, state, and local government for the conservation/protection of this habitat, including the following projects:

- The Coon Creek and Auburn Ravine riparian/wetlands project with Central Valley Joint Venture and Placer and Sutter Counties.
- The Honcut Creek and Goldfields riparian/wetlands project with Central Valley Joint Venture and Yuba County.
- The Cosumnes River Preserve riparian and wetlands project.

Acquire blue oak woodlands that meet county and state government objectives for Habitat Conservation areas and CDFG Conceptual Areas for Preservation and Protection.

Acquire habitat for special status species.

Acquire lands on Table Mountain to support vernal pool swale complex.

Acquire cultural resources that have National Register of Historic Places or National Landmark status or qualities.

Make BLM lands available for transfer and/or lease under the Recreation and Public Purposes Act. Transfers under consideration as of the date of this document include:

- Big Oak Flat Little League Field to Tuolumne County.
- Brownsville sanitation transfer site to Yuba County. This transfer is contingent on the resolution of special status species issues.

Acquire lands or interest in lands (through purchase, exchange, donation or other comparable methods) to facilitate resource management objectives. Acquisitions must conform to at least one of the acquisition criteria below:

- Acquire lands in or adjacent to areas with special designations or lands suitable to be incorporated into areas with special designations.
- Acquire lands and/or easements to complete the South Fork American River Trail system.
- Acquire lands or easements to provide access to public lands identified for retention.
- Acquire 2,000 acres of wetland habitat/riparian in the Central Valley for giant garter snake, sandhill crane, and Swainson's hawk preservation.
- Acquire lands near the Red Hills with Chinese Camp brodiaea and California verbena habitat. Acquire lands near Black Creek (Calaveras County) with Chinese Camp brodiaea habitat.
- Acquire lands that contribute to the goals and objectives of the Sierra RMP.

2.17.2 Land Use Authorizations

Management Actions

Designate ACECs, WSAs, WSR corridors, and SRMAs as avoidance areas for ROWs, permits, and leases.

Do not designate ROW corridors in areas largely dominated by private land due to the difficulty managing scattered public land parcels.

Prioritize ROWs for communication site leases in areas of existing communication sites.

2.17.3 Land Classifications and Withdrawals

Management Actions

Process classifications and propose withdrawals to protect important resources.

Propose revoking withdrawals that no longer serve their intended purpose. Prior to final revocation, review withdrawn lands to determine if other resource values require withdrawal protection.

Recommend mineral withdrawals for BLM lands in all Wild and Scenic river corridors and ACECs.

Include BLM lands on Andrews Creek in the proposed mineral withdrawal for the Red Hills ACEC.

Propose mineral withdrawal for BLM lands in the Yuba Goldfields. The mineral withdrawal would not prevent sales of solid mineral materials in the Yuba Goldfields.

Propose mineral withdrawal for the Chung Wah Chinese cemetery.

2.17.4 Access

Management Actions

Identify key access points to BLM lands in the planning area.

Pursue easements that would provide access to BLM lands for recreation, cultural/historical values, special designations, and other management needs.

Close or restrict access in specific areas to protect public health and safety, and to protect significant environmental resources.

Acquire Blue Wing Trail and Canyon Creek Trail access.

Acquire and develop Bucks Bar Trail and trailhead access.

2.18 Hazardous Materials/Abandoned Mine Lands

Goal

Minimize hazardous conditions on BLM lands to reduce risks to the public and ensure environmental health and safety.

Objectives

Prevent hazardous materials and waste contamination due to BLM actions.

Integrate hazardous materials and waste management policies and controls into all BLM programs.

Remediate physical safety hazards and water quality impacts on abandoned mine lands.

Management Actions

Guard against the release or spill of hazardous materials.

Promptly inform the public in the event of hazardous waste spills on BLM lands.

Prior to the sale or disposal of lands, notify the public if hazardous materials have been stored or disposed of on those lands.

Secure and clean up BLM public lands contaminated with hazardous wastes in accordance with applicable federal and state regulations and contingency plans. Parties responsible would be liable for cleanup and resource damage costs, as prescribed in federal and state regulations.

Remediate physical hazards at abandoned mine land (AML) sites as funding allows. The highest priority will be given to sites near high visitor use areas, such as developed campgrounds and recreation areas, sites located near residences on adjacent private property, sites impacting water quality, and sites close to frequently traveled roads on BLM lands.

2.19 Special Designations

2.19.1 Congressional Designations

Goal

Manage congressionally designated lands in accordance with their designations.

Management Actions

Update the North Fork American Wild and Scenic River Plan.

Work with the USFS to update the Tuolumne Wild and Scenic River Plan.

Acquire land in existing and recommended wild and scenic river corridors.

The following are congressionally designated Wild and Scenic Rivers; BLM has no authority to change these designations:

- Merced (15 miles; wild and recreational).
- North Fork American (11 miles; wild and scenic).
- Tuolumne (1 mile; wild).

2.19.2 Administrative Designations

Goal

Protect and manage significant and sensitive resources on BLM lands.

Objectives

Maintain the natural character of Merced River WSA (in accordance with BLM Interim Management Policy for Lands under Wilderness Review) until it is designated as a wilderness area or released by Congress.

Protect relevant and important biological and cultural resources.

Protect rivers eligible and suitable for wild and scenic designation.

Protect significant geologic, paleontological, and biological resources for research and study.

Provide wildlife viewing opportunities for the public.

2.19.2.1 Merced River Wilderness Study Area

Management Actions

Continue to implement the WSA Interim Management Policy and the 43 CFR 3802 regulations pertaining to mining claim operations in the Merced River WSA. Until Congress decides to designate the WSA as a wilderness or releases the area from study, no operations that would impair the suitability of the area for such designation will be allowed. This means that, among other activities, activities that require a plan of operations under 43 CFR 3802.1-1 are not allowed. If released by Congress from WSA designation, manage the Merced WSR corridor as an SRMA. The area outside of the WSR corridor will be managed as an ERMA. BLM will conduct route designation studies for the released lands and will manage the area to minimize impacts to the outstandingly remarkable values of the Merced Wild and Scenic River corridor.

2.19.2.2 Wild and Scenic River Suitability

In accordance with the Wild and Scenic Rivers Act (16 U.S. Code 1271-1287) and as part of the RMP process, BLM evaluated river segments in the planning area to determine their eligibility to become part of the national wild and scenic river system (NWSRS). BLM evaluated only those river segments containing considerable percentages of BLM land. BLM determined that seven river segments have outstandingly remarkable values (ORVs) and are eligible to become part of the NWSRS (Map 8). Following eligibility evaluation, BLM makes recommendations to Congress concerning the suitability of eligible river segments for inclusion in the NWSRS. The following protective management measures apply to suitable river segments (see also PRMP/FEIS Appendix E):

Free-flowing Values: Free-flowing characteristics cannot be modified by stream impoundments, diversions, channelization, and/or rip-rap to the extent BLM is authorized under the law.

River-related Values: Protect or enhance ORVs, subject to valid existing rights.

Classification Impacts: Management and development in the river corridor cannot affect the river's eligibility or suitability classification, subject to valid existing rights. The following river segments are recommended to Congress as suitable for Wild and Scenic River designation (Maps 8, 8a, and 8b):

- South Fork American (22 miles; recreational).
- North Fork/main Mokelumne (20 miles; wild, scenic, and recreational).

The South Yuba River was recommended suitable for Wild and Scenic River designation in the *Record of Decision for 22 Westside Rivers* issued by the Tahoe National Forest in May 1999.

2.19.2.3 Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACECs) are areas of public land where special management attention is required to protect relevant and important natural or cultural resource values.

Management Actions

The following six existing ACECs will be retained:

- Lone Tertiary Oxisol Soils (85 acres).
- Lone Manzanita (123 acres).
- Nissenan Manzanita (73 acres).
- Red Hills (7,184 acres).
- Limestone Salamander (1,728 acres).
- Merced River (2,836 acres).

Lands within the vicinity of an ACEC that are acquired to conserve one or more special attributes already identified for the ACEC will be managed under the same guidelines as the ACEC until the acquired lands are formally designated as part of the ACEC. The following restrictions apply to existing, expanded, or new ACECs:

- No new grazing leases will be granted unless grazing benefits the values for which the ACEC was designated, such as special status plants.
- ROWs, leases for civic uses (e.g., Recreation and Public Purposes Act leases), and other land use authorizations will be confined to areas that lack ACEC values.
- Fuels reduction will be designed to minimize impacts on ACECs.

Designate the 796-acre **Deadman's Flat ACEC** (Map 5a). Relevant and important values include: gabbro; massive diabase and serpentine substrates with Secca and Dubakella soils supporting leather oak chaparral and a diverse chaparral resembling northern gabbroic mixed chaparral; one federally endangered plant species, *Calystegia stebbinsii* (Stebbins' morning glory); and a dwarf *Fremontodendron* closely related to another federally endangered species, Pine Hill flannelbush. Protection of Stebbins' morning glory populations and potential habitat will be prioritized. Similar protection will be afforded to the dwarf flannelbush.

Designate the 3,236-acre **Pine Hill Preserve ACEC** (Map 5b). Develop the Pine Hill Preserve Management Plan. Relevant and important values include: Rescue series soils derived from gabbro and pyroxenite, five federally listed plant species (*Calystegia stebbinsii*, *Ceanothus roderickii*, *Fremontodendron decumbens*, *Galium californicum sierrae*, and *Packera layneae*), BLM sensitive species (*Chlorogalum grandiflorum*, *Helianthemum suffrutescens*, and *Wyethia reticulata*), and the northern gabbroic mixed chaparral plant community.

Designate the 1,129-acre **North Fork Cosumnes River ACEC** (Map 5b). Relevant and important values are natural and scenic values and the river's unique hydrologic variability and processes.

Designate the 54-acre **Spivey Pond ACEC** (Map 5b) and manage in accordance with the Spivey Pond Management Plan to protect the federally threatened California red-legged frog.

Designate the 2,035-acre **Cosumnes River Preserve ACEC** (Map 5c). Develop the Cosumnes River Preserve Management Plan. Relevant and important values include the existence or potential for restoration of: (1) valley oak (*Quercus lobata*) riparian forest; (2) seasonal wetlands; (3) vernal pools; (4) oak (*Quercus* spp.) savannah; and (5) agricultural lands such as irrigated pasture and crops that provide habitat for sandhill cranes (*Grus Canadensis*) and a buffer for the Preserve.

Expand the **lone Manzanita ACEC** by 141 acres (Map 5c). Relevant and important values in the expanded area include exposed older landforms of the lone Formation and associated Valley Springs and Mehrten Formations, relict soils formed under a tropical weathering regime, two federally listed plant species (*Arctostaphylos myrtifolia* and *Eriogonum apricum*), BLM sensitive species (*Horkelia parryi*, *Helianthemum suffrutescens* and *Eryngium pinnatisectum*), and the lone chaparral plant community adapted to highly acidic, low nutrient, high aluminum conditions. Poison Lake toxic waste remediation would not be allowed to impair the values for which the ACEC was designated.

BLM anticipates considering a future land exchange in the Lone Manzanita ACEC. This land exchange would facilitate BLM's management of the ACEC by consolidating BLM parcels and by further protecting the values for which the ACEC was established. Public lands that may be exchanged do not support lone manzanita. Lands that would be acquired in the exchange would have greater or equivalent value to the lands being transferred to private ownership. If this exchange were to occur, BLM would transfer the following 20-acre parcel into private ownership: T5N, R10E, Section 32, W1/2 of SW1/4 of SE1/4. In exchange, BLM would acquire 20 acres in T5N, R10E, Section 32, W1/2 of SE1/4 of SE1/4.

Designate the 5,775-acre **Bagby Serpentine ACEC** (Map 5d). Relevant and important values are the Henneke soil series soils developed on a serpentine substrate supporting at least two BLM sensitive serpentine endemic species (*Lupinus spectabilis* and *Cryptantha mariposae*), other serpentine endemics, and the serpentine buckbrush chaparral community.

Expand the **Red Hills ACEC** by 2,824 acres (Maps 5d-e). Continue management in accordance with Red Hills ACEC Management Plan until a new management plan is developed that addresses current issues (i.e., discovery of populations of new listed species, increased recreation, etc.). Relevant and important values include: Delpiedra soils derived from dunite and serpentine, two federally listed species (*Verbena californica* and *Packera layneae*), four BLM sensitive species (*Allium tuolumnense*, *Chlorogalum grandiflorum*, *Lomatium congdonii*, and *Senecio clevelandii heterophyllus*), and the serpentine buckbrush chaparral plant community. If acquired, habitat for the federally threatened species *Brodiaea pallida* will be added to the ACEC.

Expand the **Limestone Salamander ACEC** by 473 acres (Map 5d). Relevant and important values are limestone salamanders and their habitat.

Pine Hill Preserve ACEC use restrictions:

- Prohibit target shooting and camping.
- Allow commercial uses through special recreation use permits.
- Limit hiking, equestrian and mountain bike use to existing designated trails.
- Close trails that are causing adverse impacts to ACEC values or other resources.
- Approve new trails (hiking, equestrian, or mountain bike) only if they do not adversely affect the ACEC's relevant and important values.
- Prohibit ROWs that adversely impact rare plant populations or fragment their habitat.

Red Hills ACEC use restrictions:

- Prohibit target shooting and camping.
- Allow commercial uses through special recreation use permits.
- Maintain existing facilities to support pedestrian and equestrian activities.
- Limit motorized use to the paved county road (Red Hills Road), the Serpentine Loop Road and a couple of spurs off the Serpentine Loop Road (Map 6f).
- Limit hiking, equestrian, and mountain bike use to existing designated trails.
- Close trails that are causing adverse impacts to ACEC values or other resources.
- New trail proposals (hiking, equestrian, or mountain bike) will be approved only if they do not adversely affect the ACEC's relevant and important values.
- Conduct a cadastral survey and fence Red Hills ACEC boundaries.

North Fork Cosumnes River ACEC use restrictions:

- New facilities, roads, etc. would only be built to preserve ACEC values.
- Logging or grazing would only occur in order to reduce the fuel hazard or restore plant communities (e.g., invasive weed control).
- ACEC lands will be recommended for withdrawal from mineral entry.

2.19.2.4 Research Natural Areas

A Research Natural Area (RNA) is an ACEC that is established and maintained for the primary purpose of research and education because the land has one or more of the following characteristics:

- A typical representation of a common plant or animal association;
- An unusual plant or animal association;
- A threatened or endangered plant or animal species;
- Outstanding or unusual geologic, soil, or water features; or
- A typical representation of common geologic, soil, or water features.

Designate the 320-acre **Dutch Flat/Indiana Hill RNA** (Map 5a). The relevant and important values include geologic exposures of Tertiary-age ancestral Yuba River deposits containing abundant plant macro-fossils with high scientific value.

Appendix A. Maps

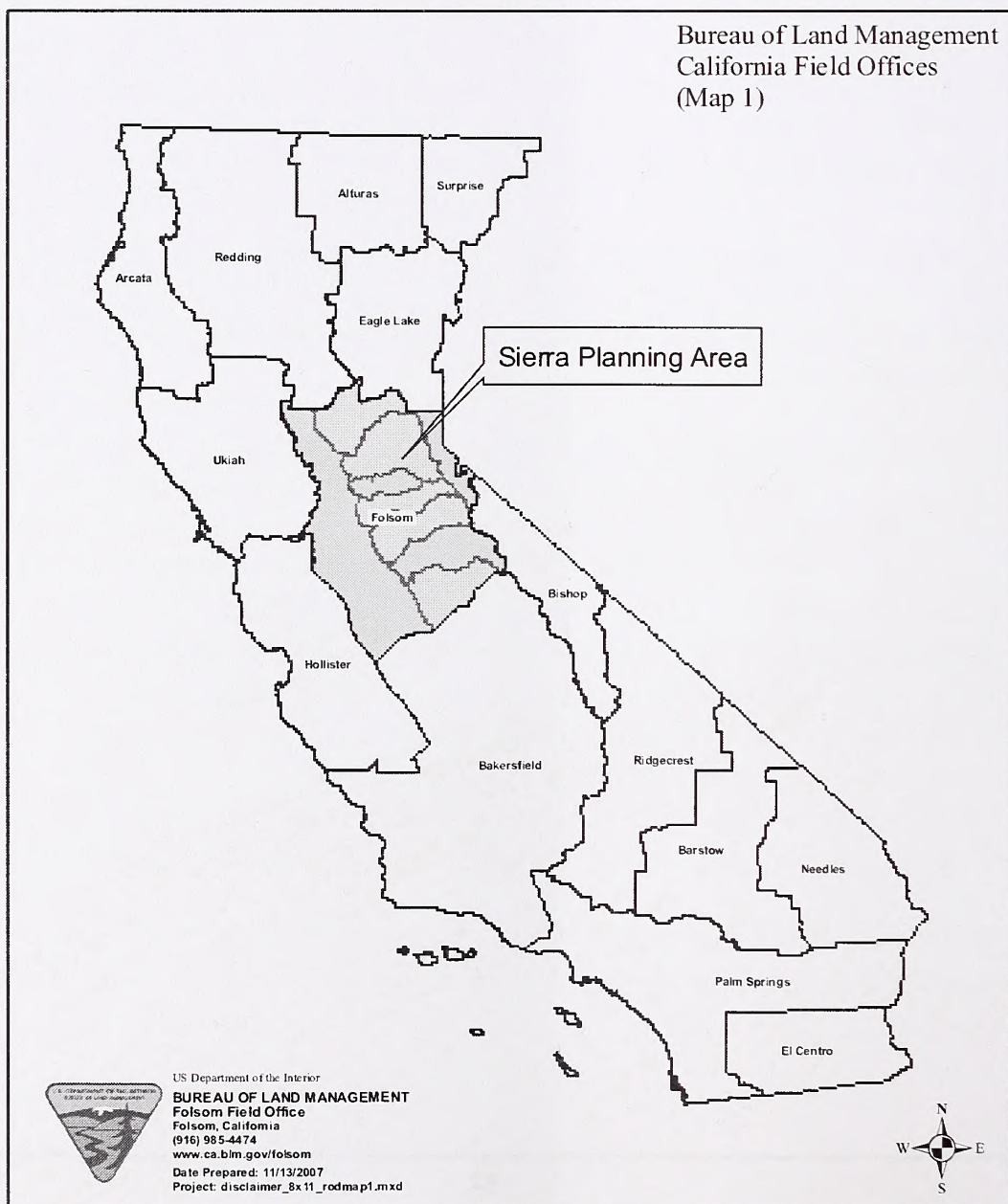


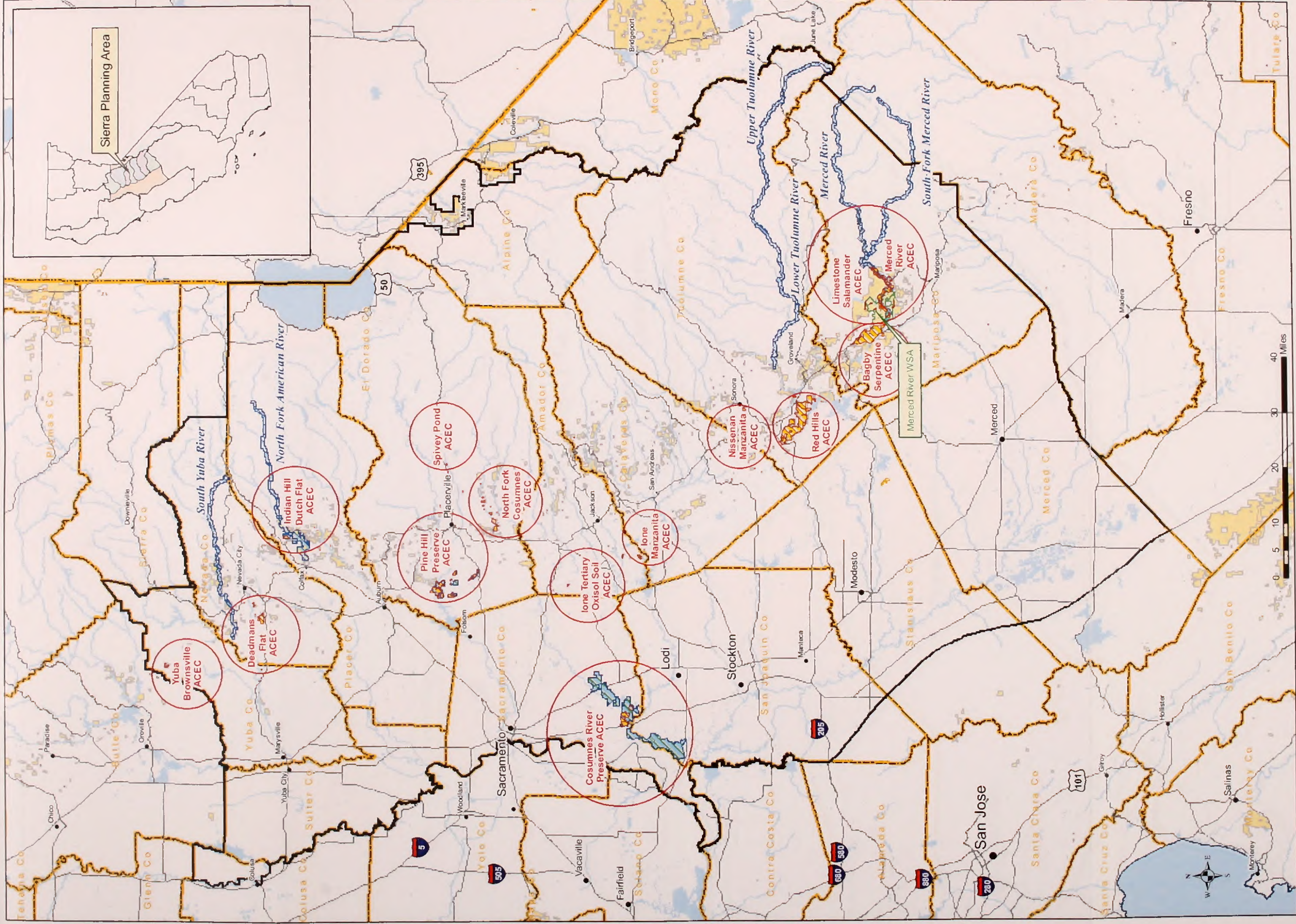
Map Disclaimer

The following maps are to be used for the Sierra RMP/ROD process concerning the Sierra Planning Area. These are informative maps specifically designed to illustrate the areas being discussed. These maps are not authorized for any uses outside of this specific planning process. Every reasonable effort has been made to ensure the accuracy of the maps and data provided; nevertheless, some information may not be accurate. The Bureau of Land Management assumes no responsibility arising from the use of this information.

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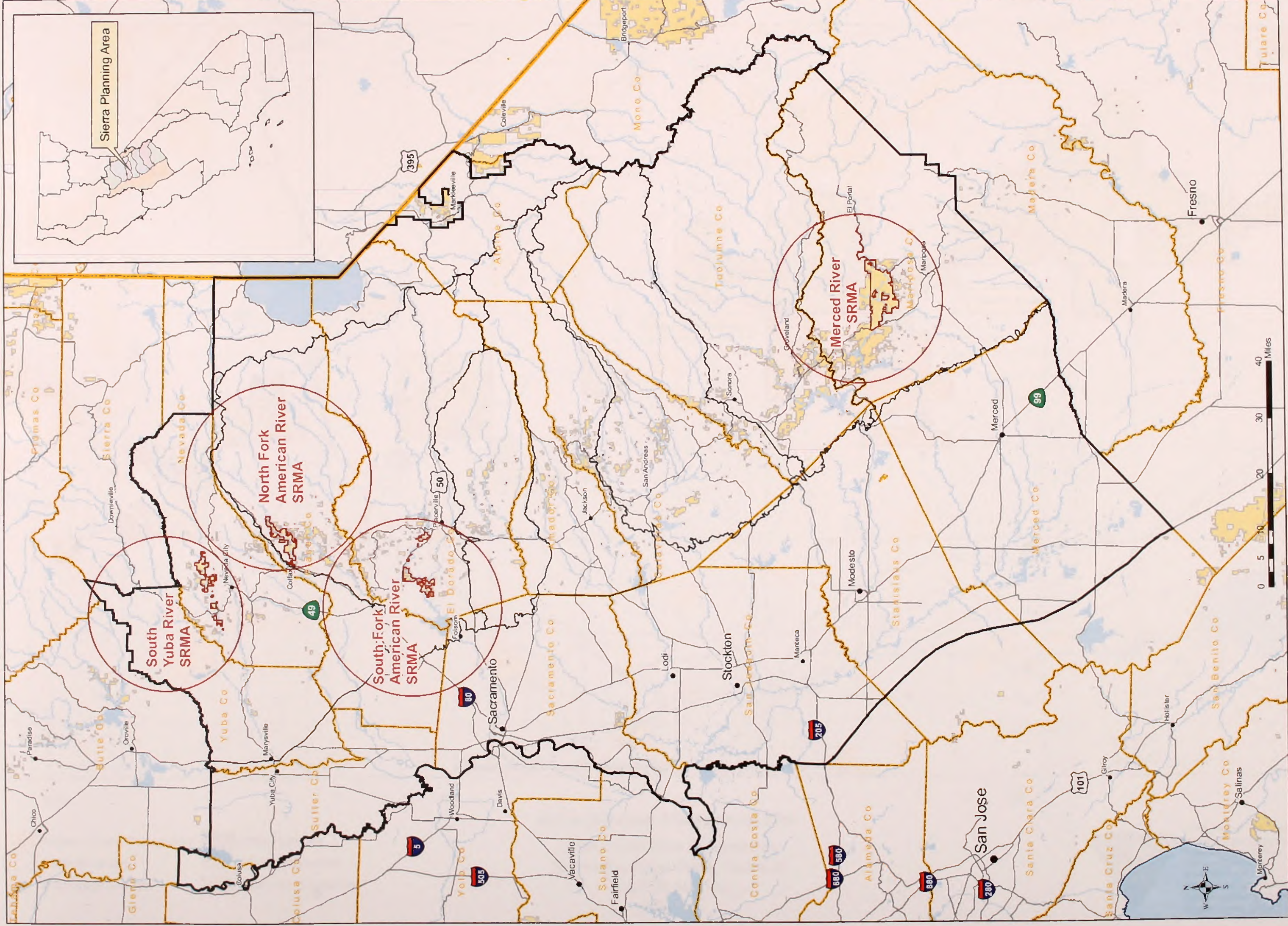
- Sierra Planning Area
- Bureau of Land Management
- Wilderness Study Area
- Existing Wild & Scenic River
- Preserve (lands managed by non-BLM partners)
- ACEC

Sierra Resource Management Plan

Special Management Areas (Map 2)



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- Sierra Planning Area
- Bureau of Land Management
- SRMA

Sierra Resource Management Plan

SRMAs
Special Recreation Management Areas
(Map 4)



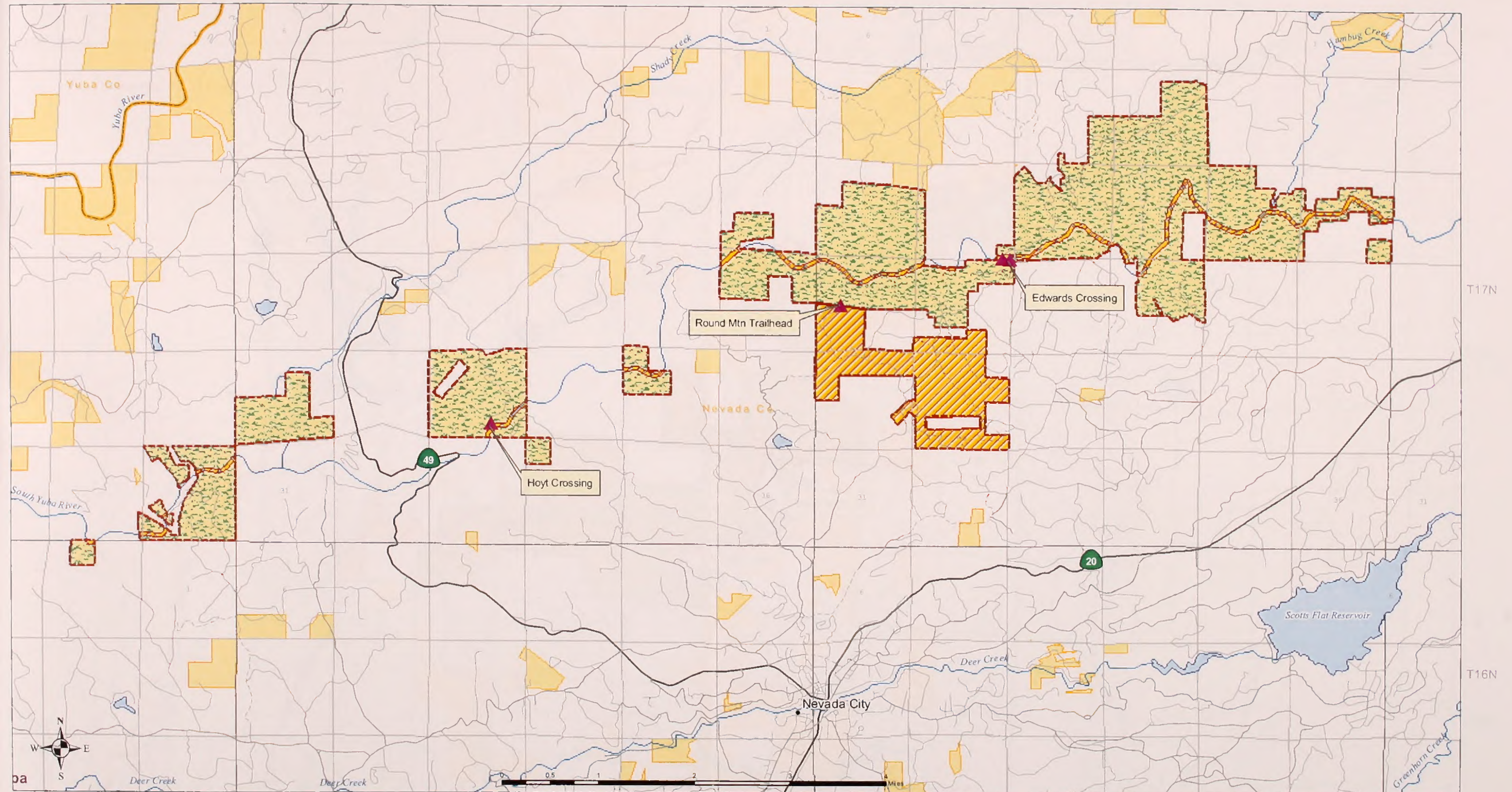
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R7E

R8E

R9E

R10E



Sierra Resource Management Plan

SRMA with ROS Designations
Recreation Opportunity Spectrum
South Yuba River
(Map 4a)



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R9E

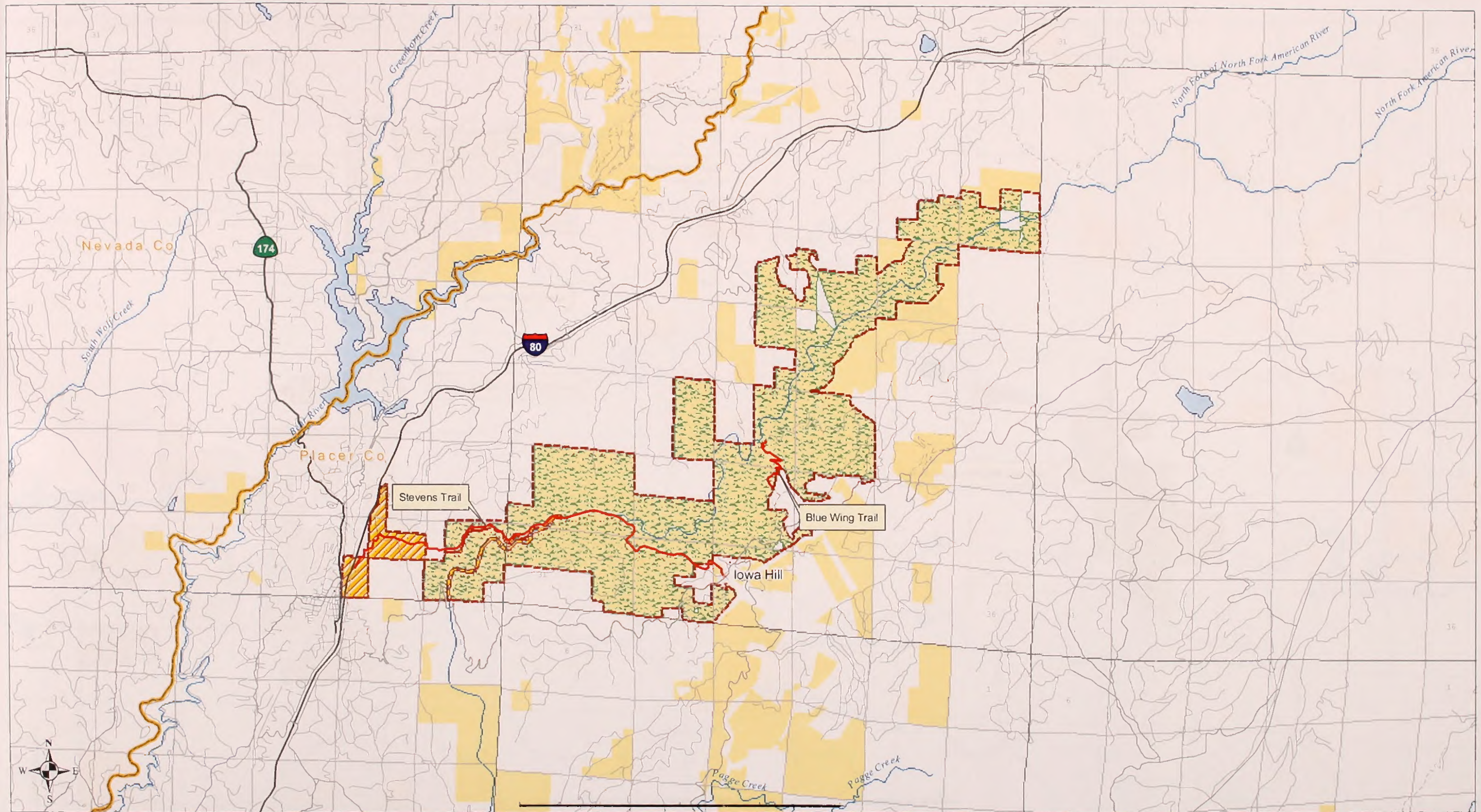
R10E

R11E

T16N

T15N

T14N



R9E

R10E

R11E

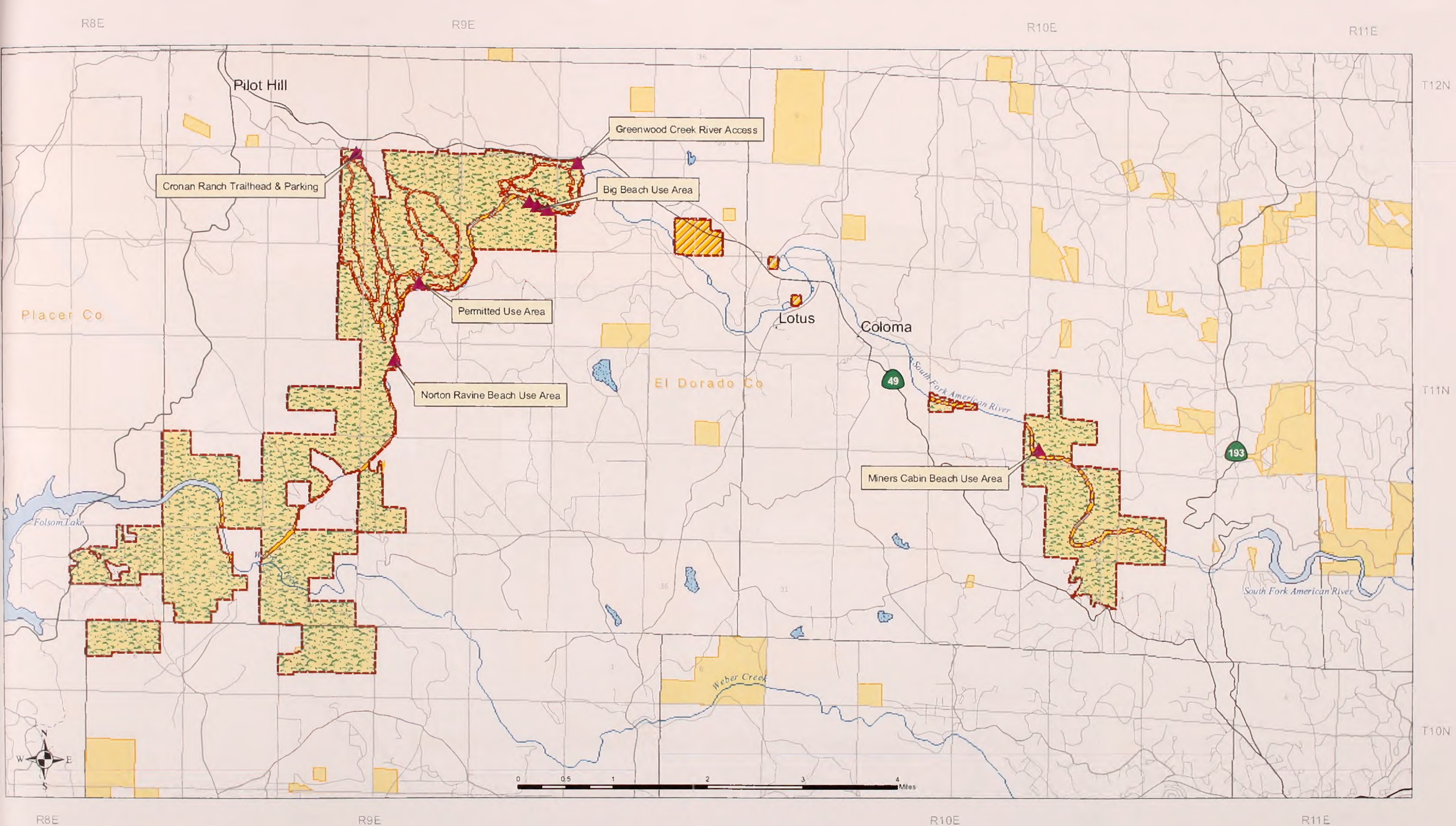
Sierra Resource Management Plan

SRMA with ROS Designations
Recreation Opportunity Spectrum
North Fork of the American River
(Map 4b)

- Bureau of Land Management
- SRMA Boundary
- ROS: Transitional Use
- ROS: High Use
- ROS: Remote Use
- SRMA High Use Site

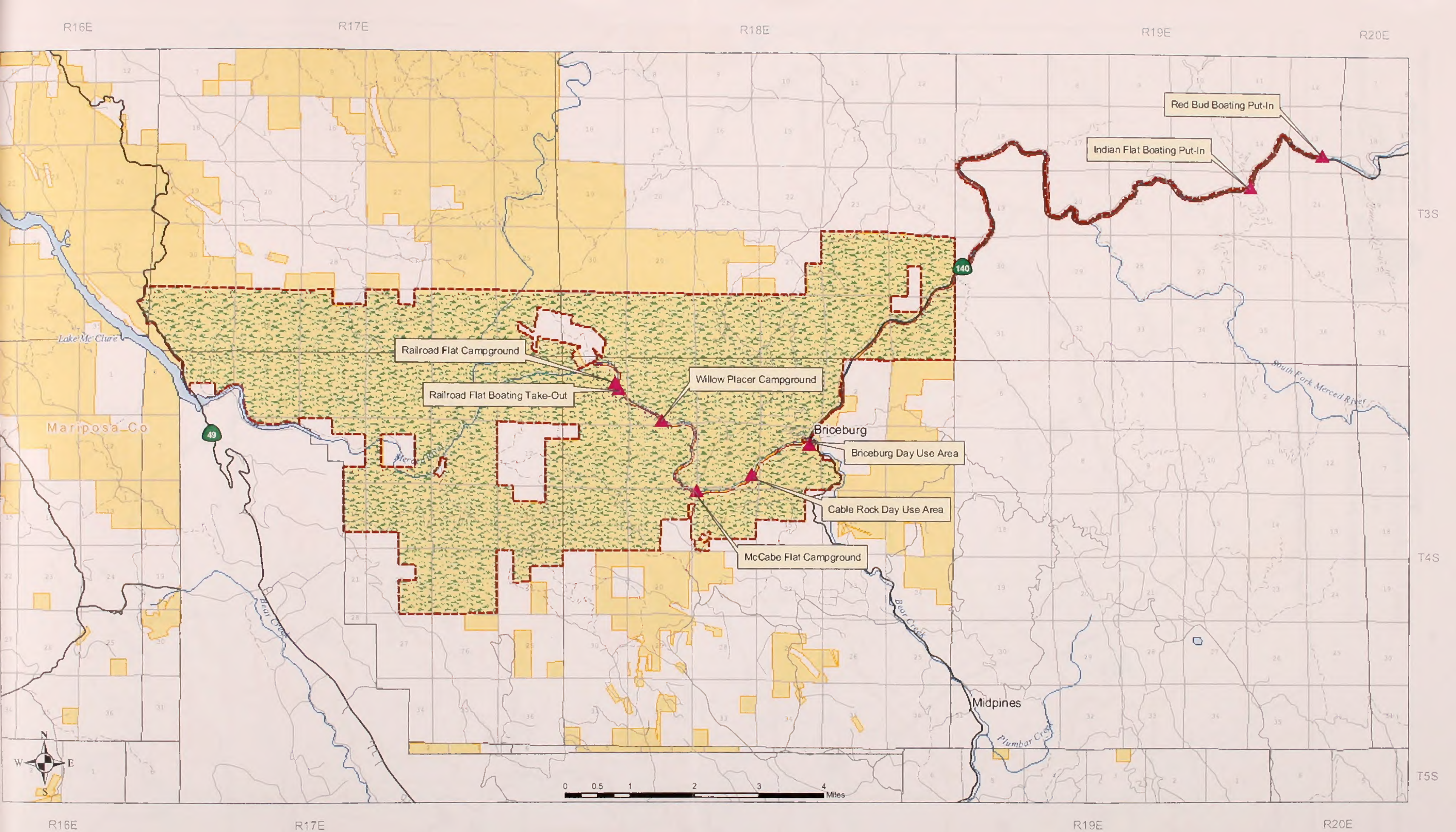


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Sierra Resource Management Plan
 SRMA with ROS Designations
 Recreation Opportunity Spectrum
 South Fork of the American River
 (Map 4c)

- | | |
|---------------------------|-----------------------|
| Bureau of Land Management | ROS: High Use |
| SRMA Boundary | ROS: Remote Use |
| SRMA High Use Site | ROS: Transitional Use |



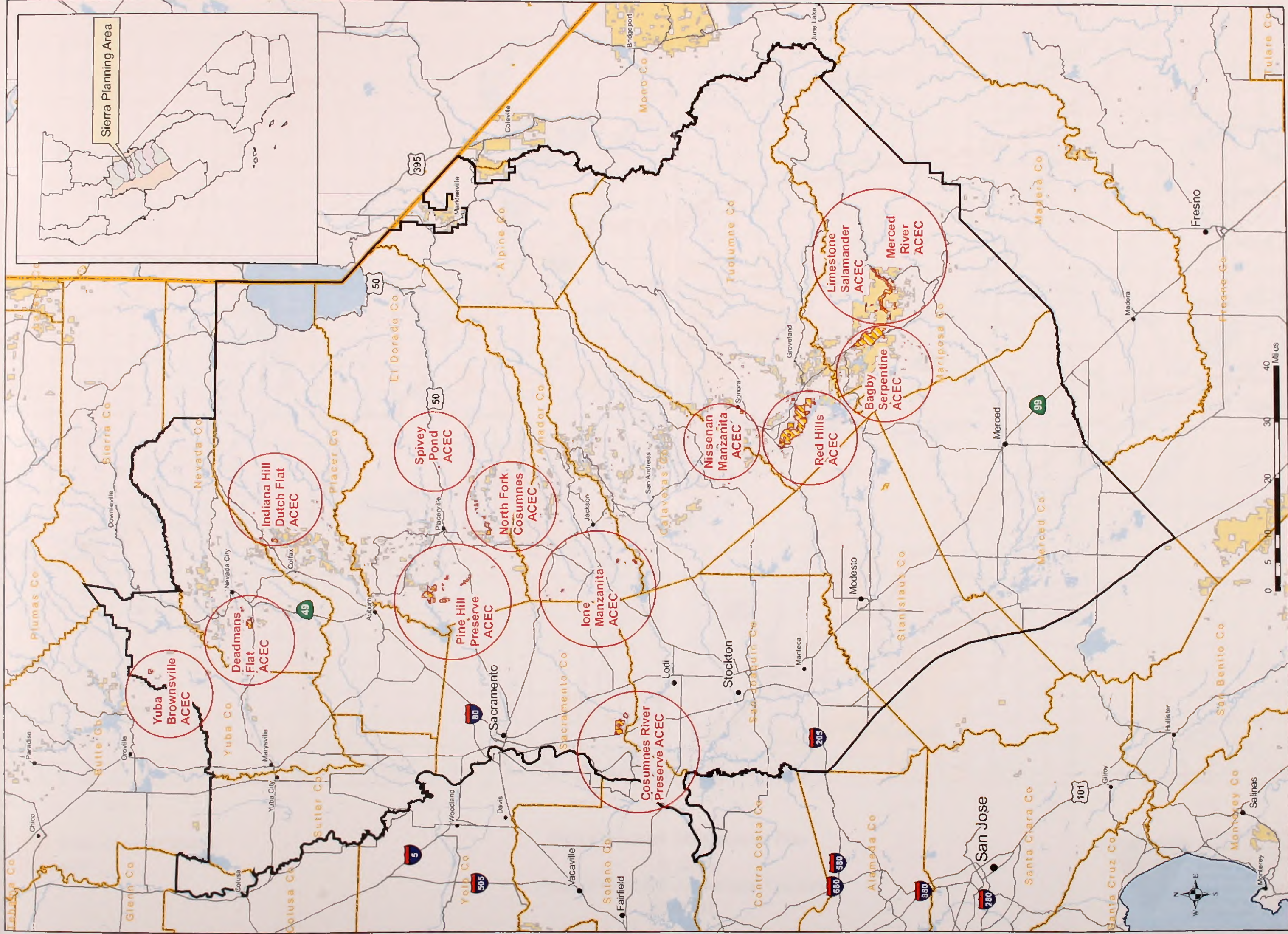
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SRMA with ROS Designations
Recreation Opportunity Spectrum
Merced River
(Map 4d)



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- | | |
|---------------------------|-----------------------|
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| SRMA Boundary | ROS: Remote Use |
| SRMA High Use Site | ROS: Transitional Use |

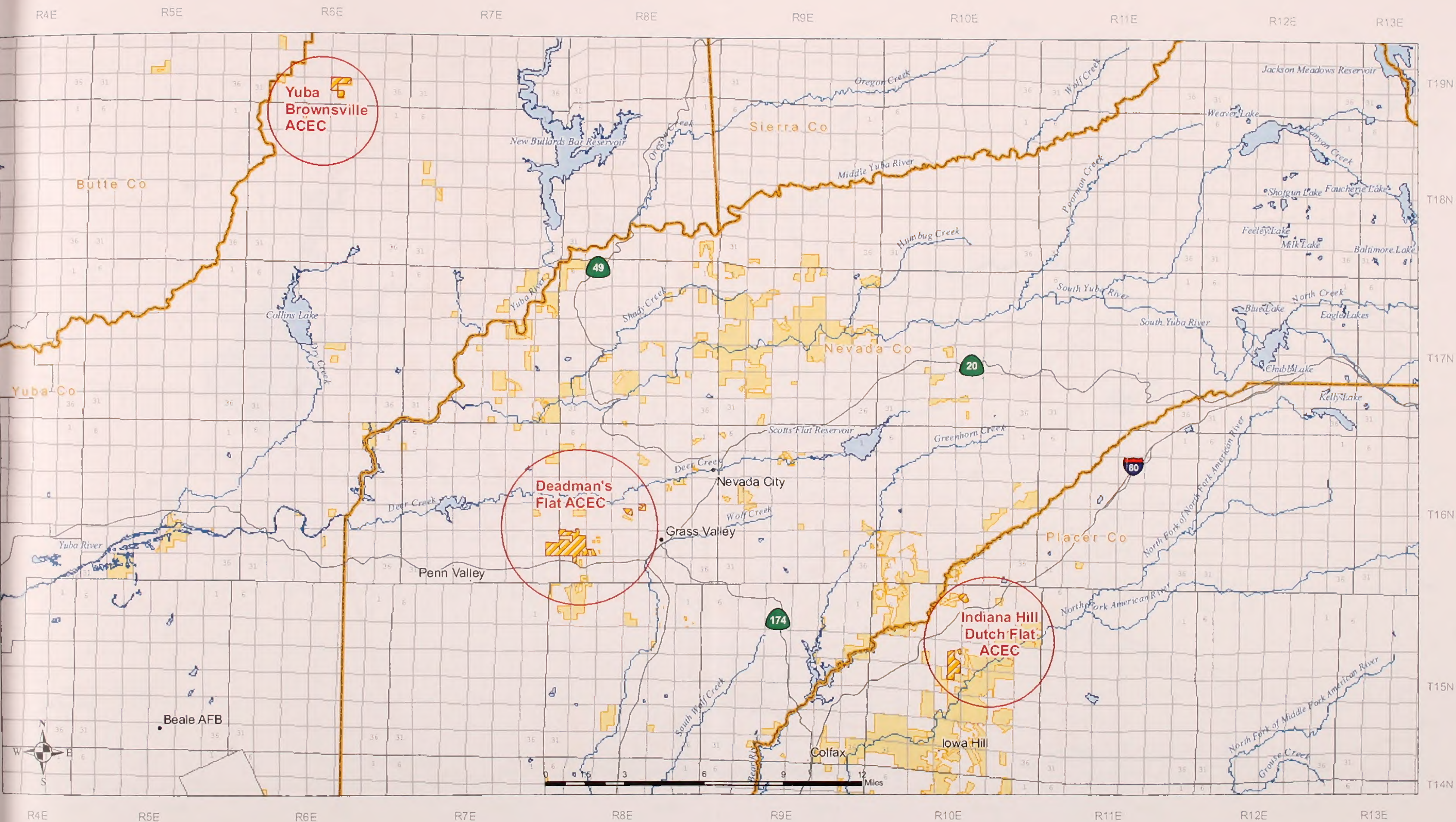




Sierra Resource Management Plan
ACECs
Areas of Critical Environmental Concern
(Map 5)

Sierra Planning Area
 Bureau of Land Management
 ACEC



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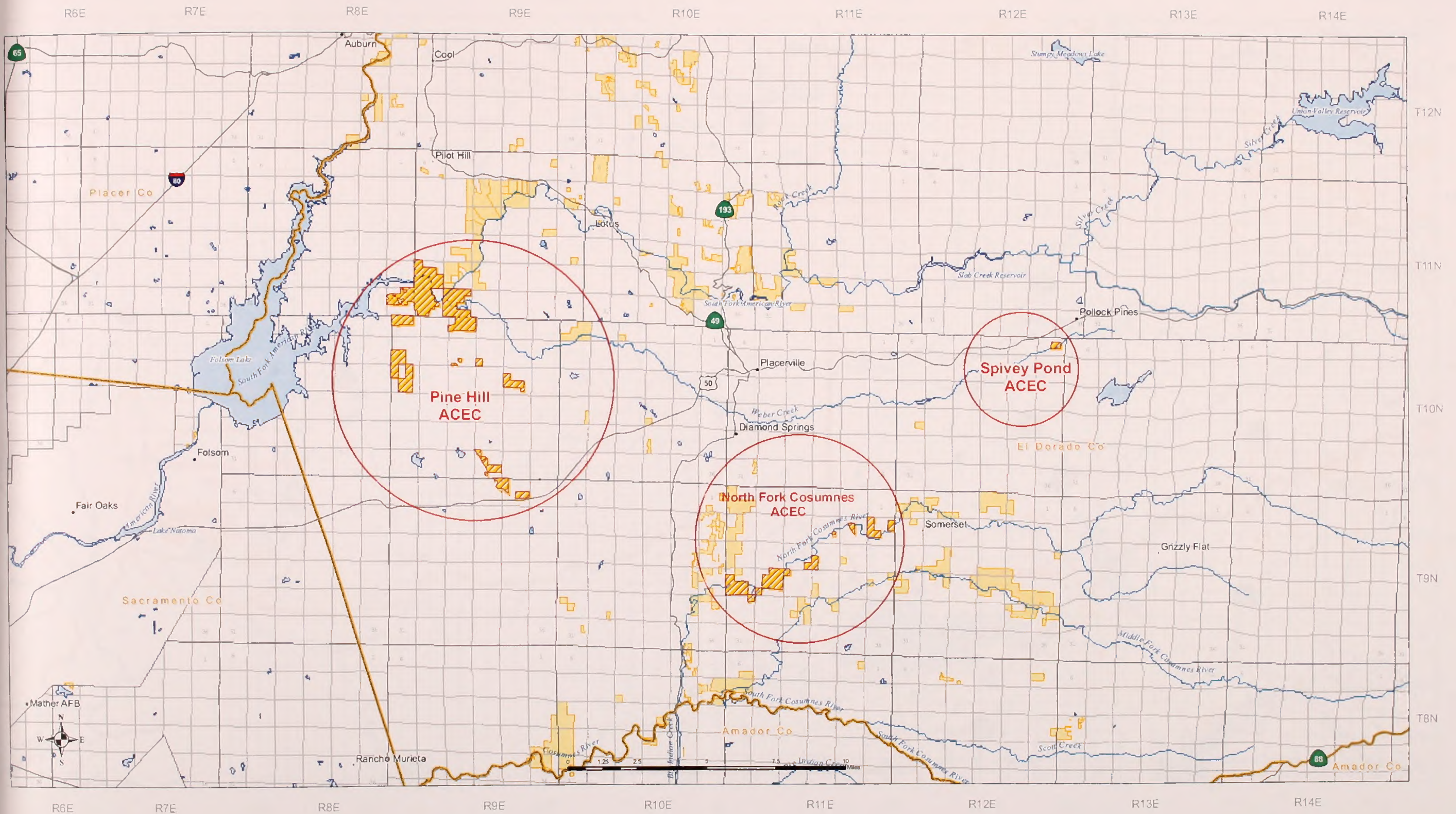




 Bureau of Land Management
 ACEC

Sierra Resource Management Plan
 ACECs
 Areas of Critical Environmental Concern
 (Map 5a)



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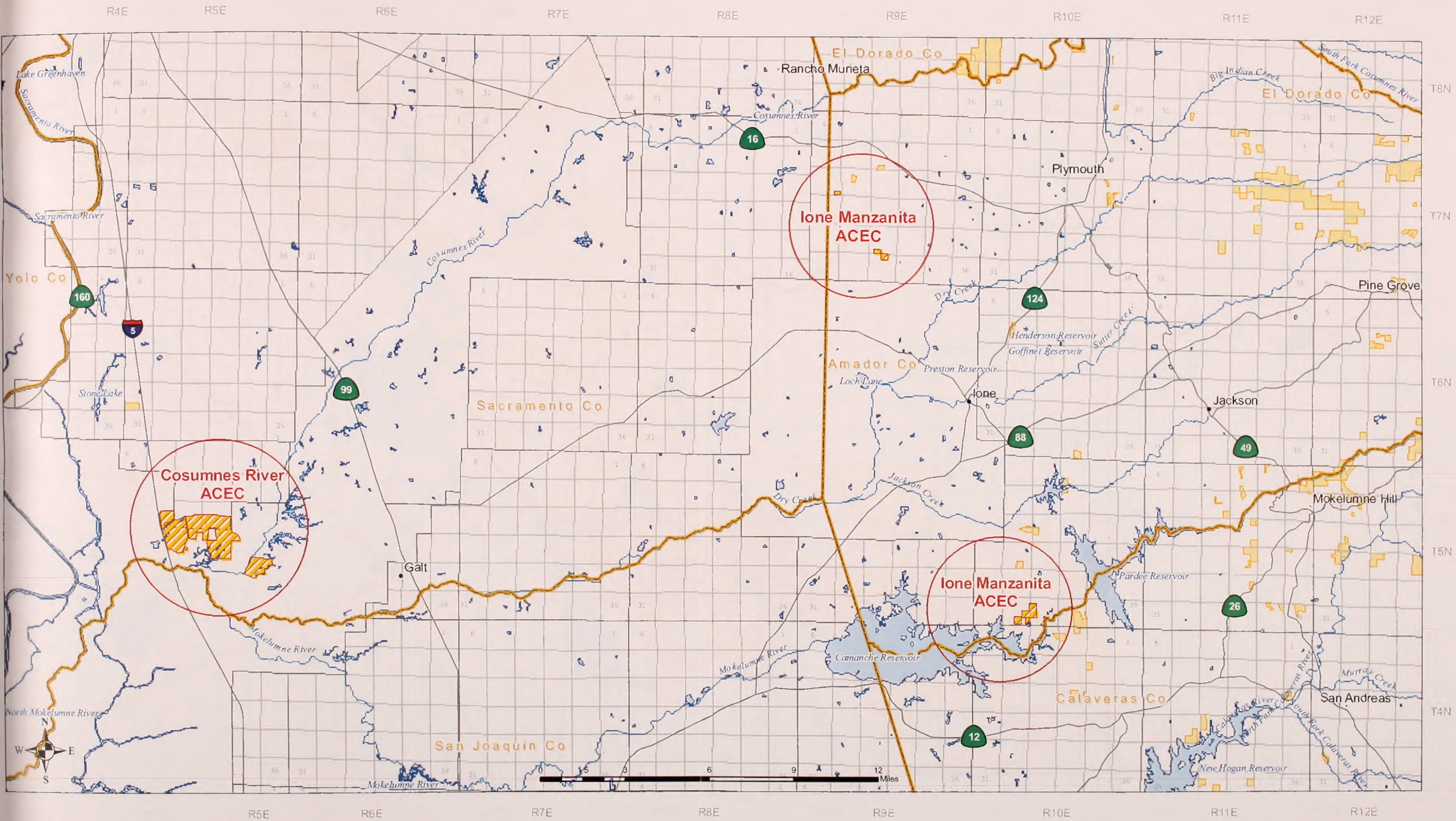




 Bureau of Land Management
 ACEC

Sierra Resource Management Plan
ACECs
Areas of Critical Environmental Concern
(Map 5b)



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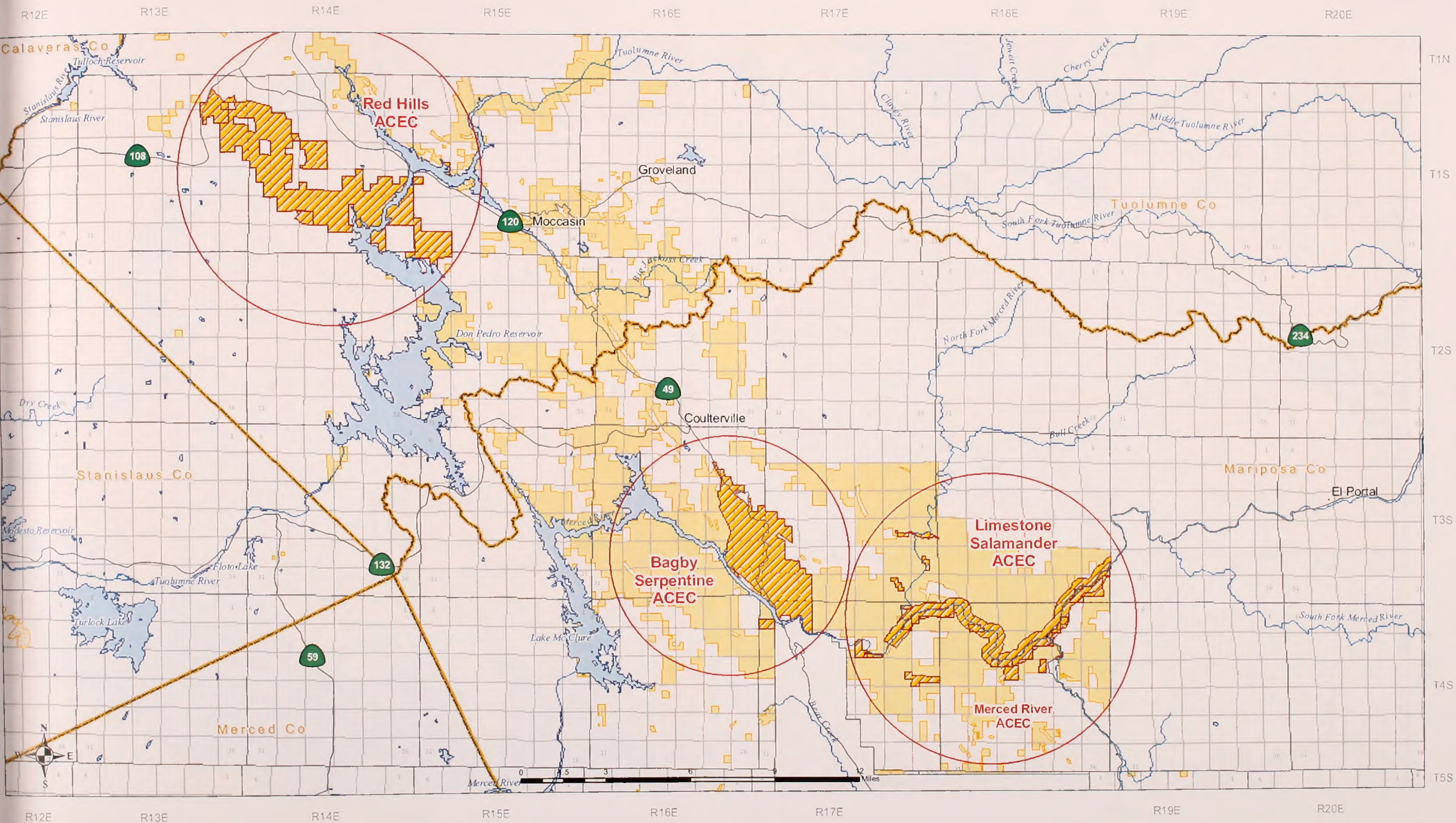


 Bureau of Land Management
 ACEC

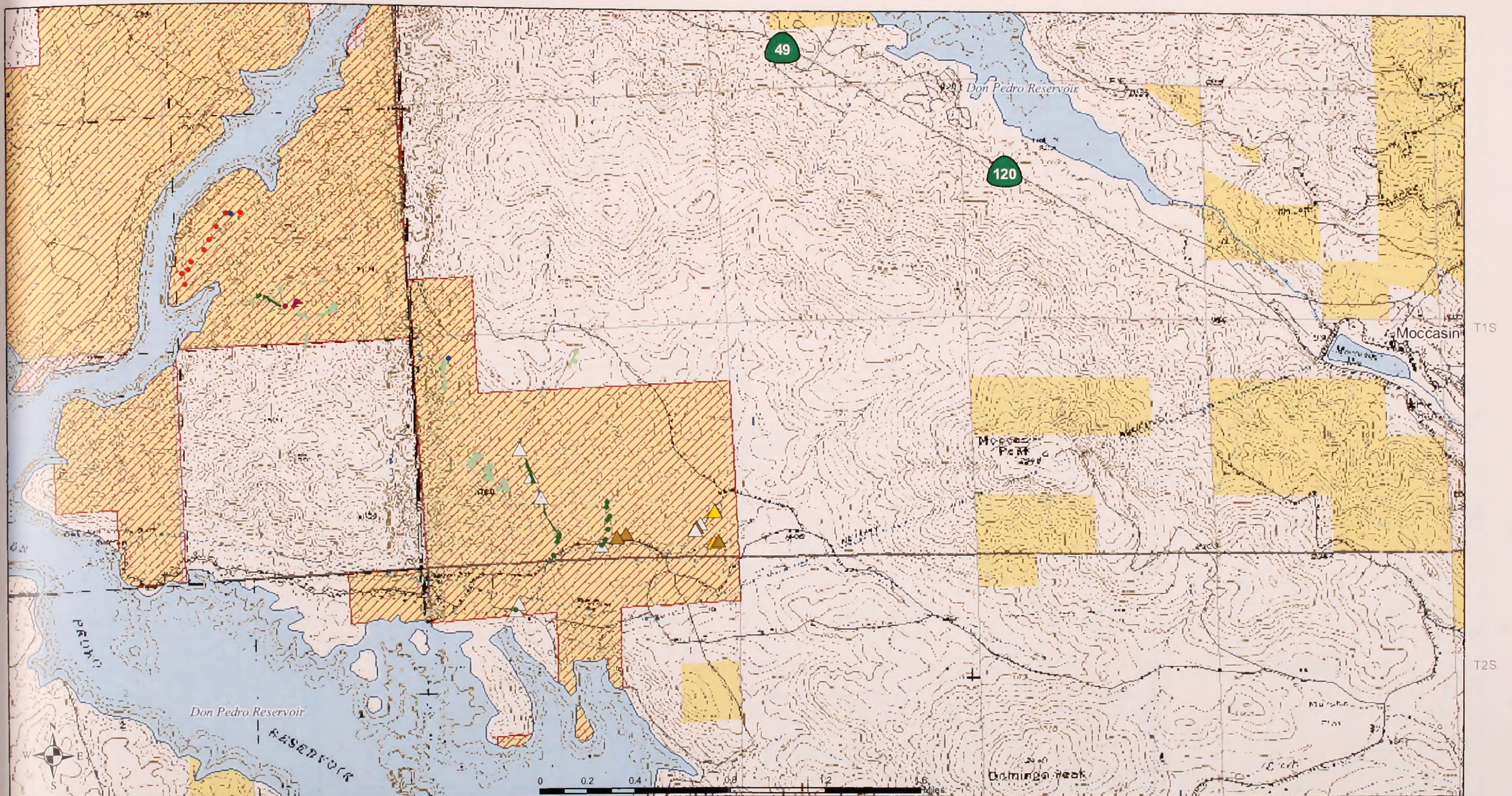
Sierra Resource Management Plan
ACECs
Areas of Critical Environmental Concern
(Map 5c)



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R14E

R15E

Sierra Resource Management Plan

Rare Plants and Animals in the Red Hills ACEC East of Don Pedro Reservoir (Map 5e)



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ACEC

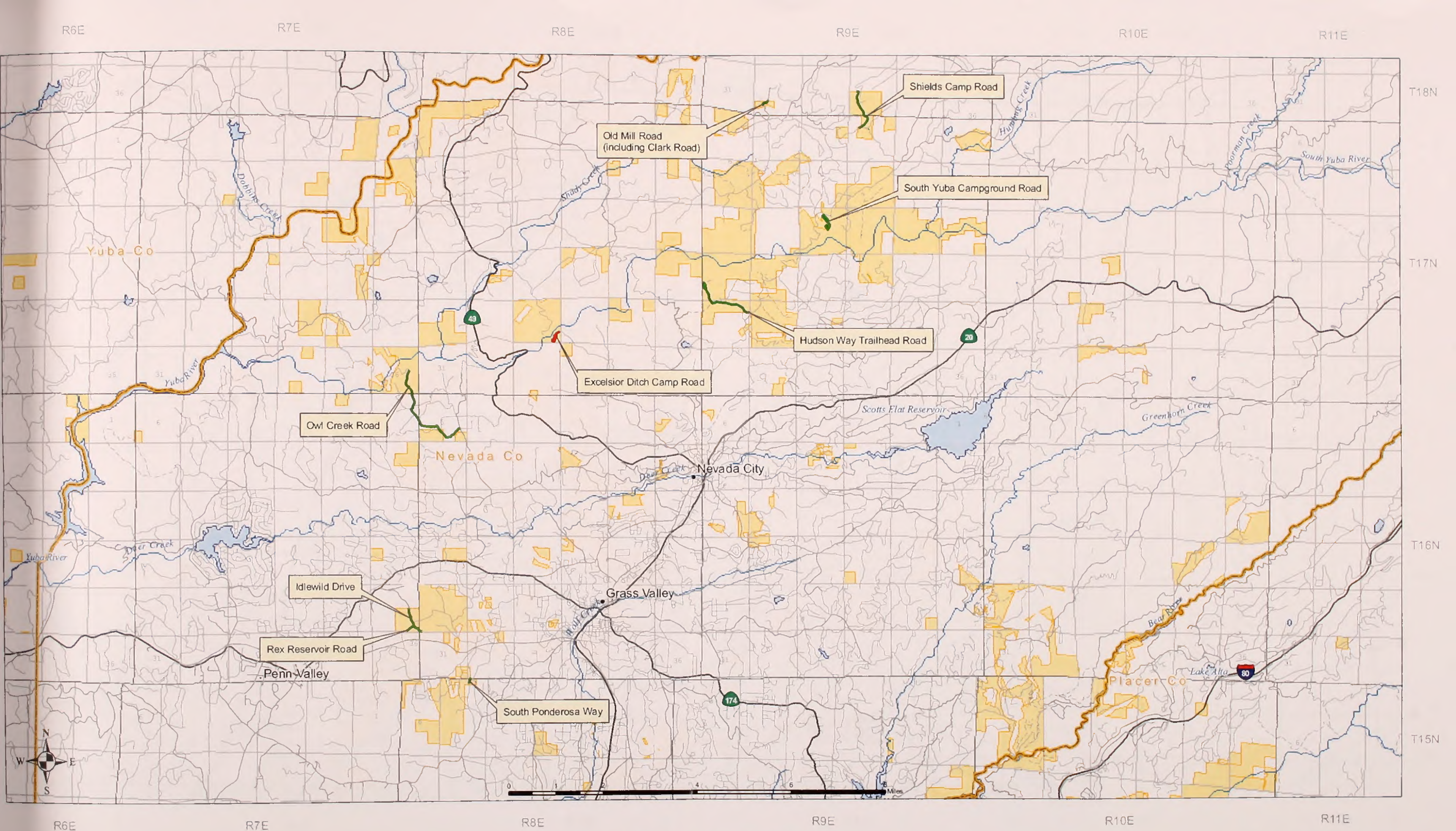
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Animals

- ▲ Elderberry shrubs
- ▲ Foothill yellow-legged frog
- △ CA roach and/or western pond turtle

Plants

- Hoovers butterweed
- Laynes butterweed
- Congdon's lomatium
- Rawhide hill onion
- Red Hills soaproot



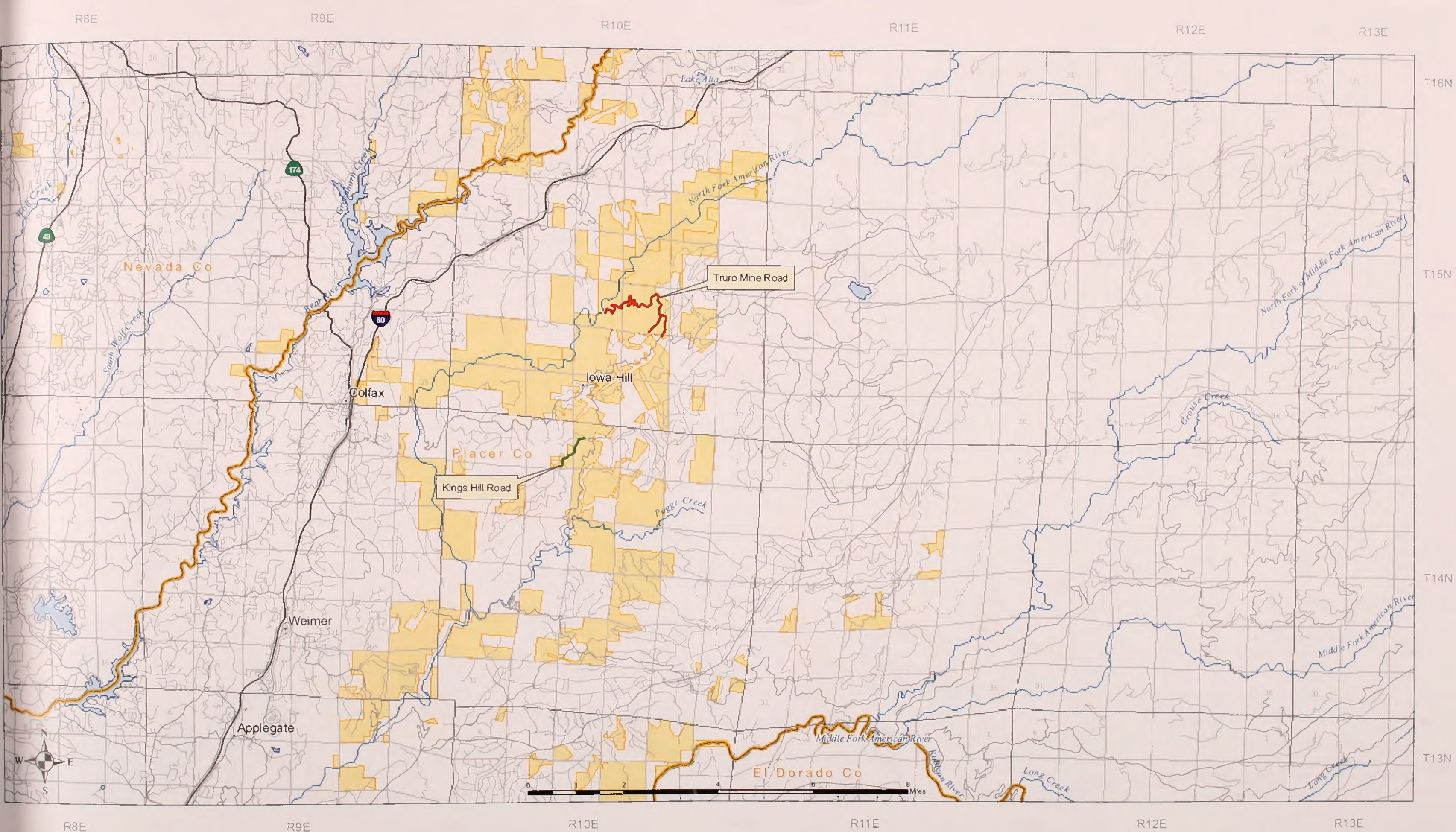
Sierra Resource Management Plan

Motorized Vehicle Route Designations South Yuba River Area (Map 6a)

- Bureau of Land Management
- Designated Interim Route
- Designated Open Route



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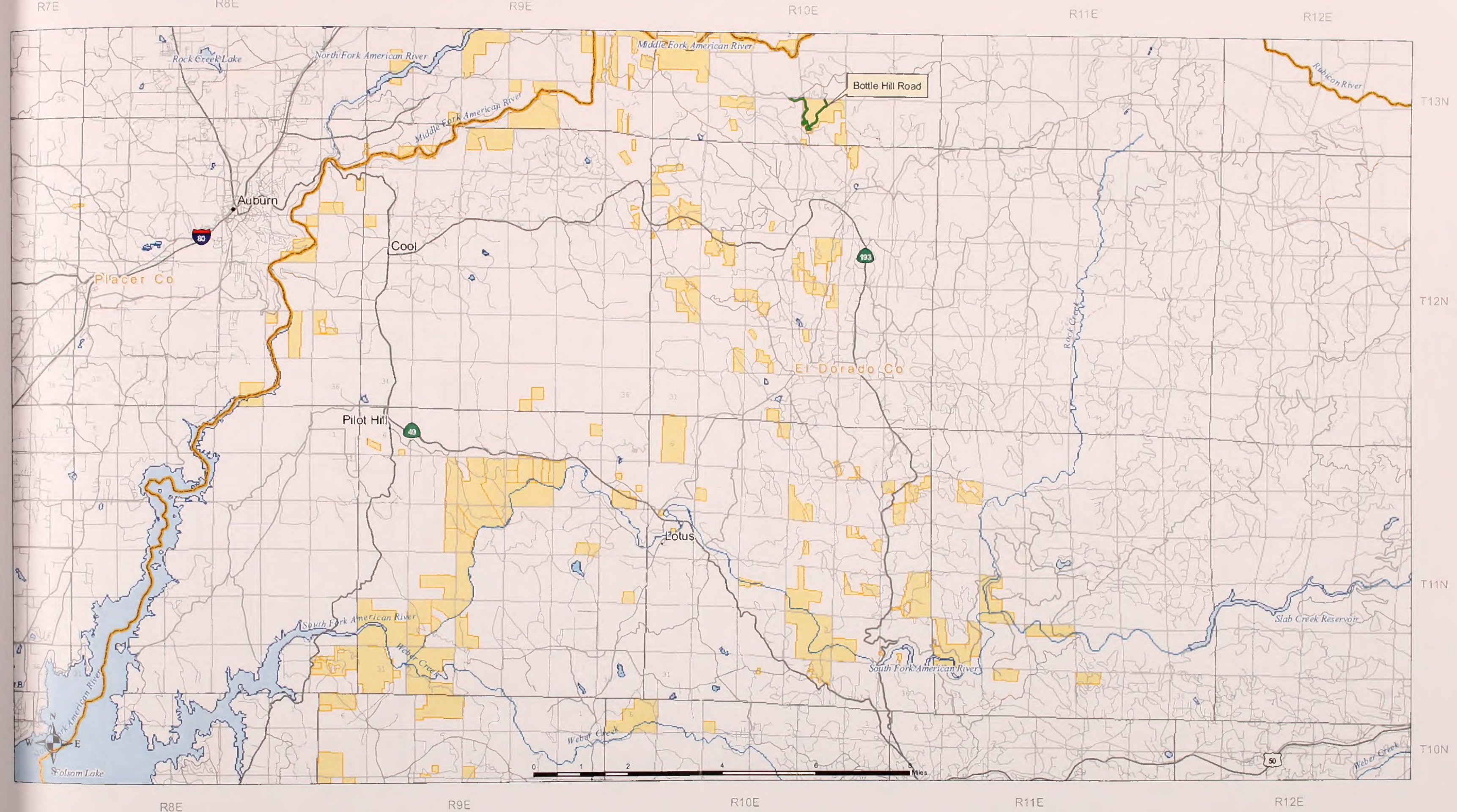
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Motorized Vehicle Route Designations North Fork of the American River (Map 6b)

- Bureau of Land Management
- Designated Interim Route
- Designated Open Route



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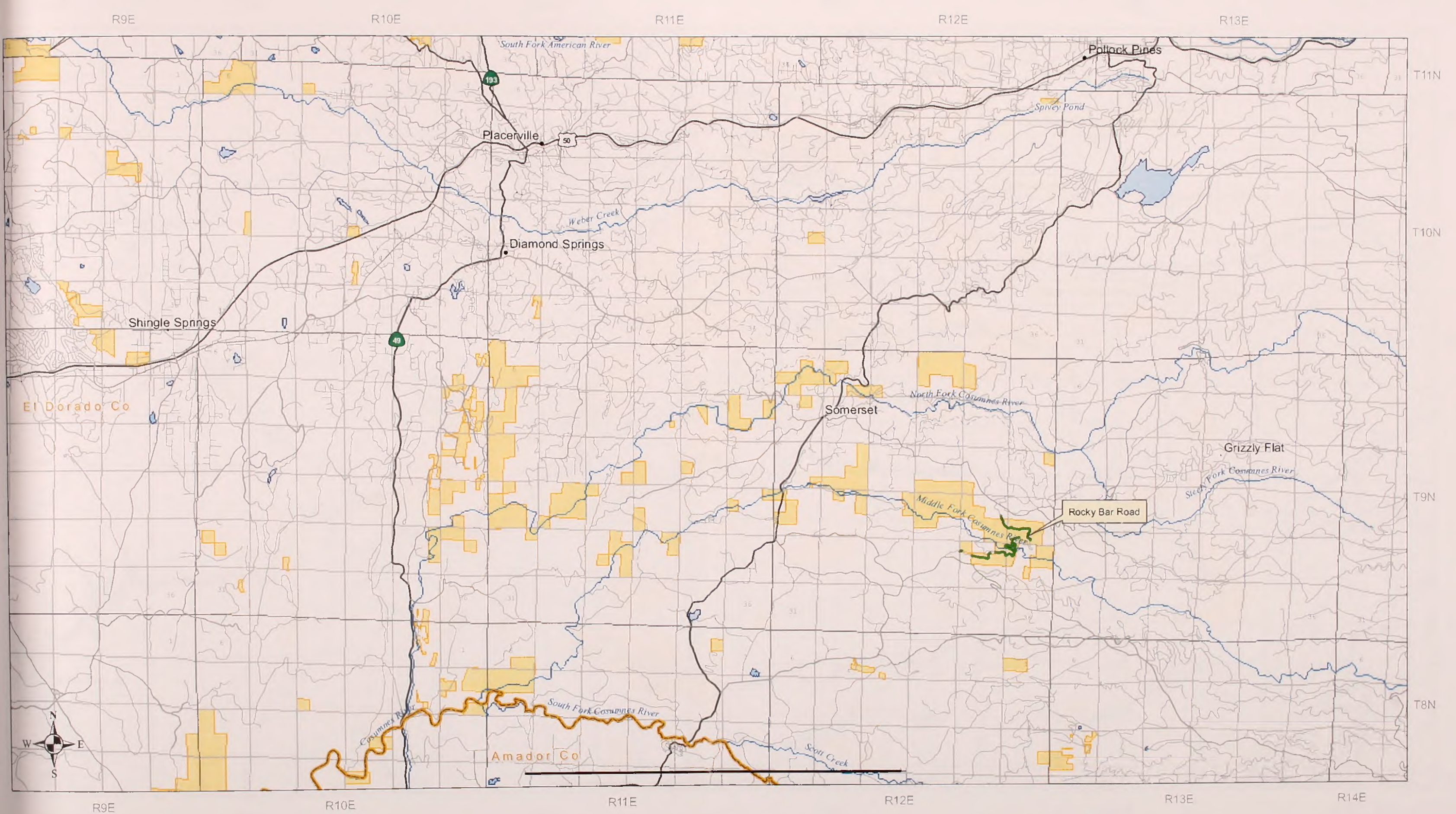


- Bureau of Land Management
- Designated Interim Route
- Designated Open Route

Sierra Resource Management Plan
Motorized Vehicle Route Designations
South Fork of the American River
 (Map 6c)



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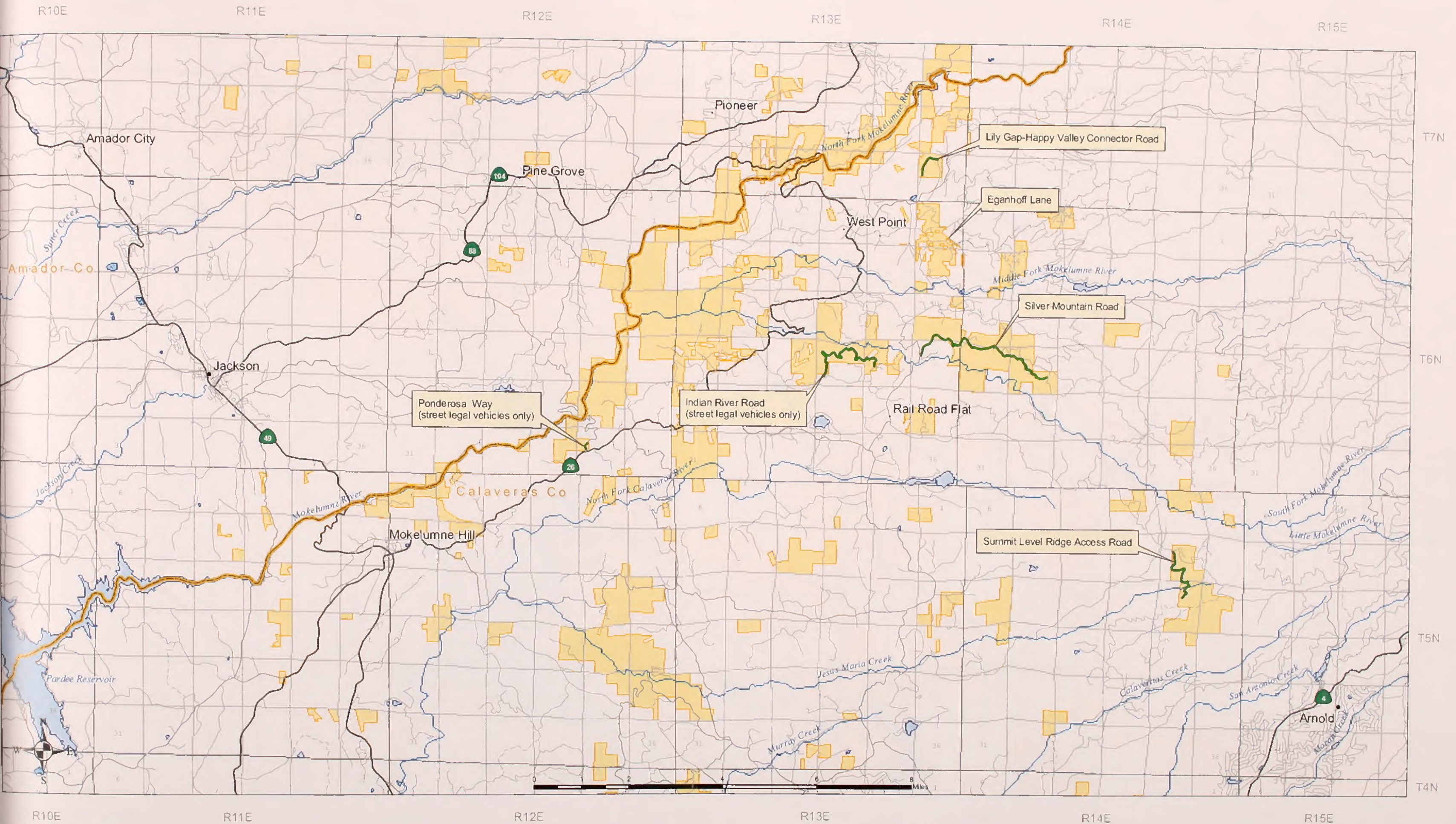
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Motorized Vehicle Route Designations Cosumnes River Area (Map 6d)

- Bureau of Land Management
- Designated Interim Route
- Designated Open Route



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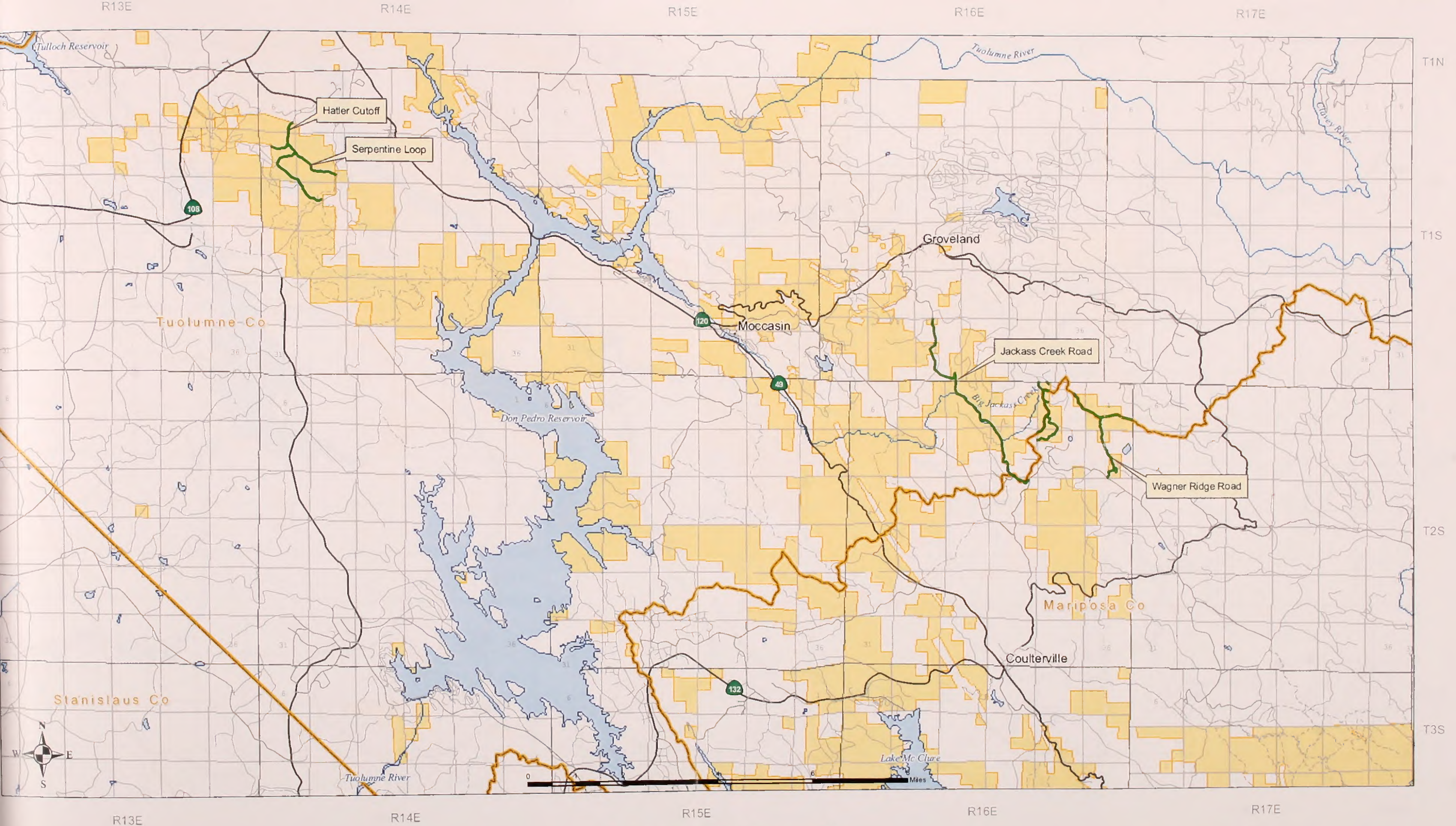
Sierra Resource Management Plan

Motorized Vehicle Route Designations Mokelumne River Area (Map 6e)

- Bureau of Land Management
- Designated Interim Route
- Designated Open Route



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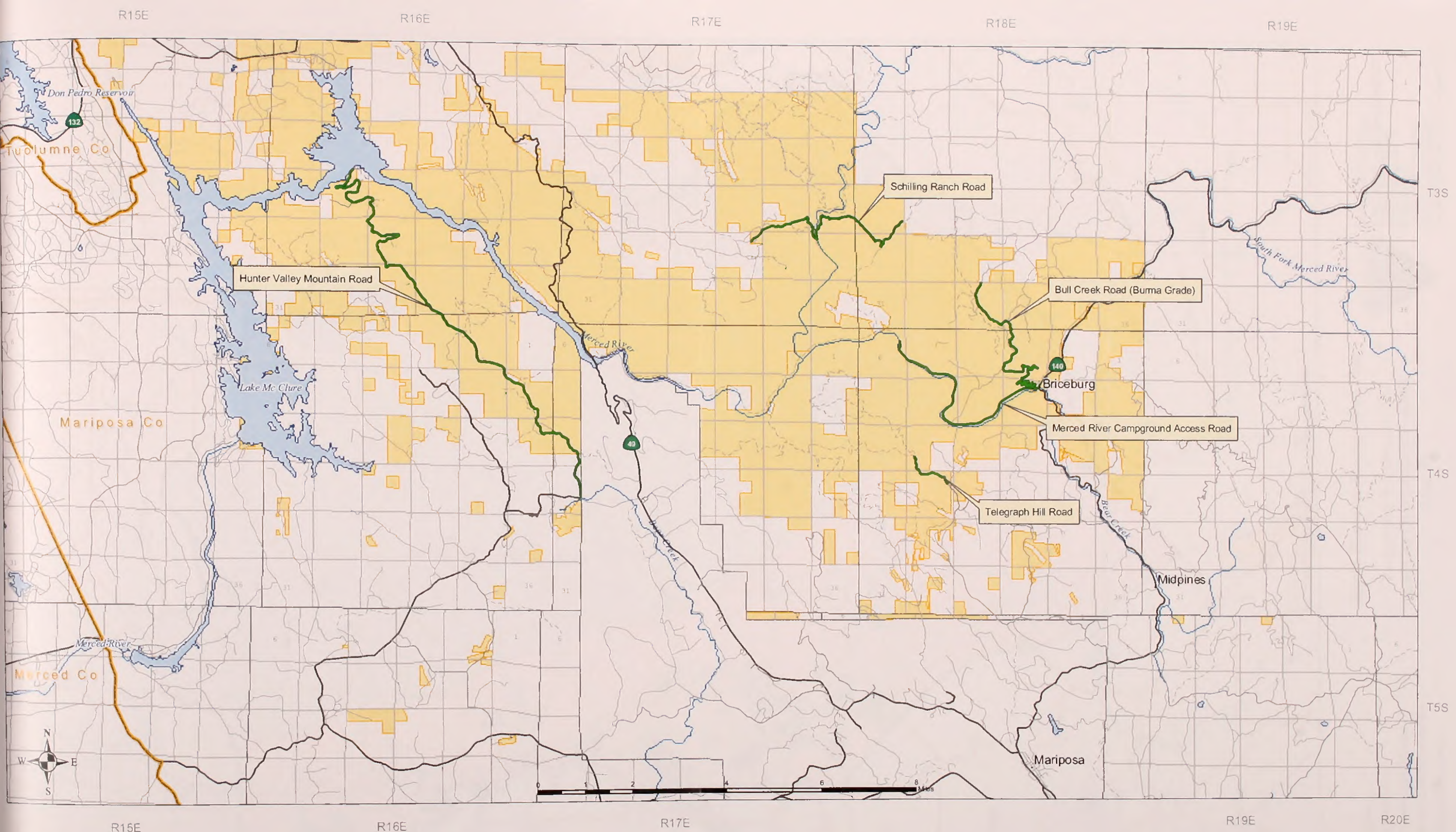


Sierra Resource Management Plan

Motorized Vehicle Route Designations Tuolumne River Area (Map 6f)



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 Project: routes_11x17_rodmap6f.mxd

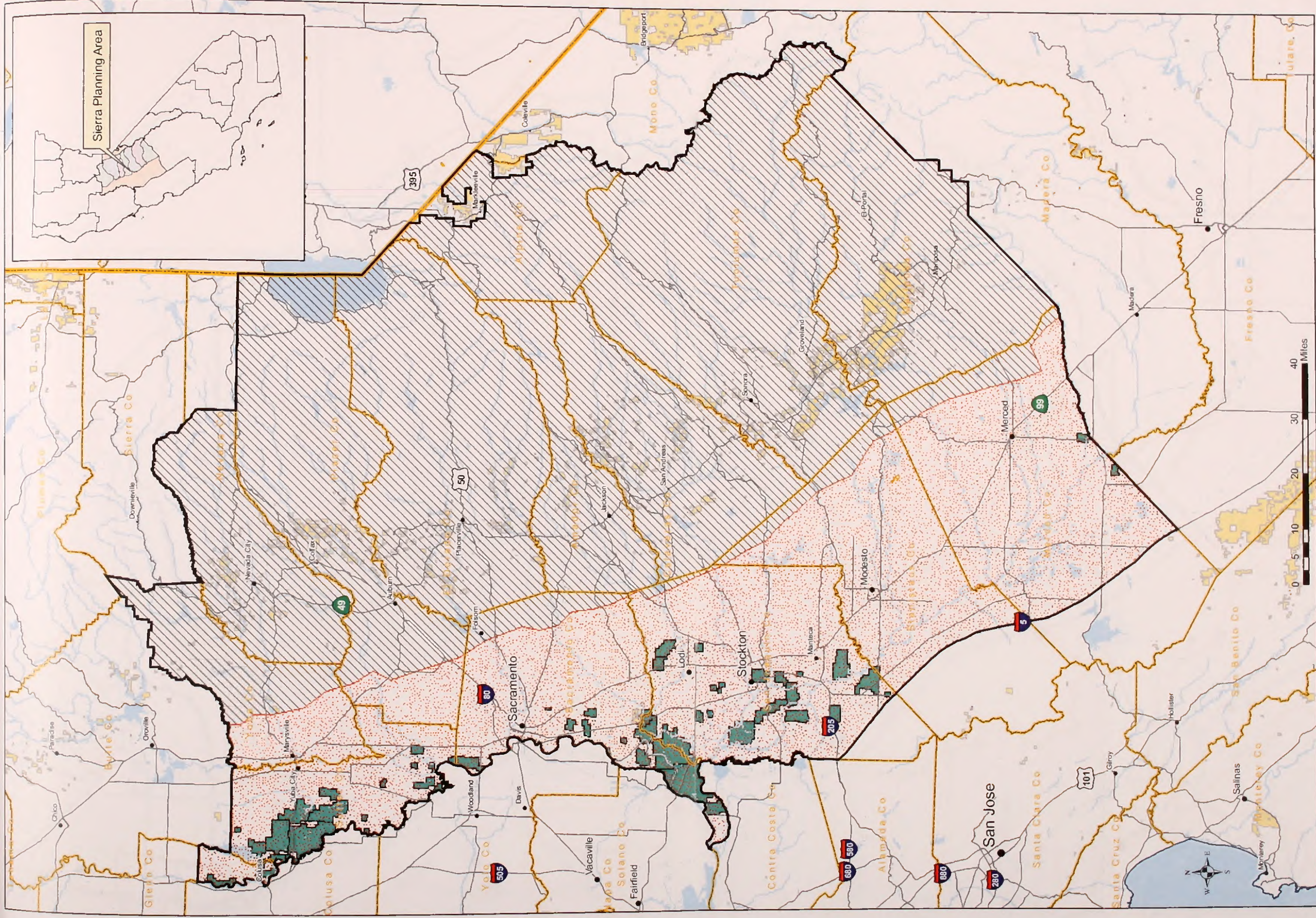


- Bureau of Land Management
- Designated Interim Route
- Designated Open Route

Sierra Resource Management Plan
Motorized Vehicle Route Designations
Merced River Area
 (Map 6g)



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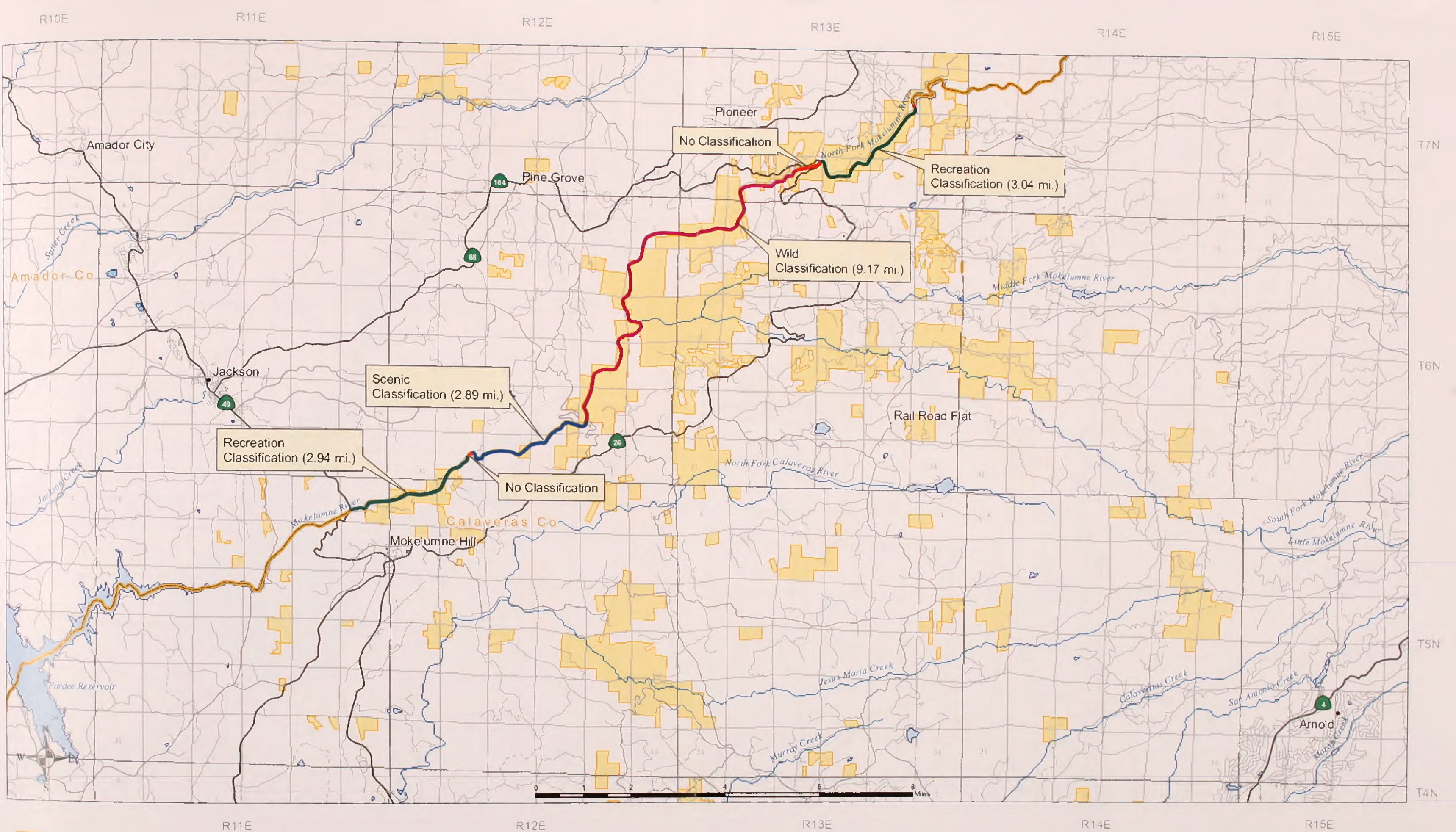


- Sierra Planning Area
- Bureau of Land Management
- High Oil & Gas Development Potential
- Low to No Oil & Gas Development Potential
- Administrative Gas Field Boundaries

Sierra Resource Management Plan Reasonably Foreseeable Oil and Gas Development Potential (Map 7)



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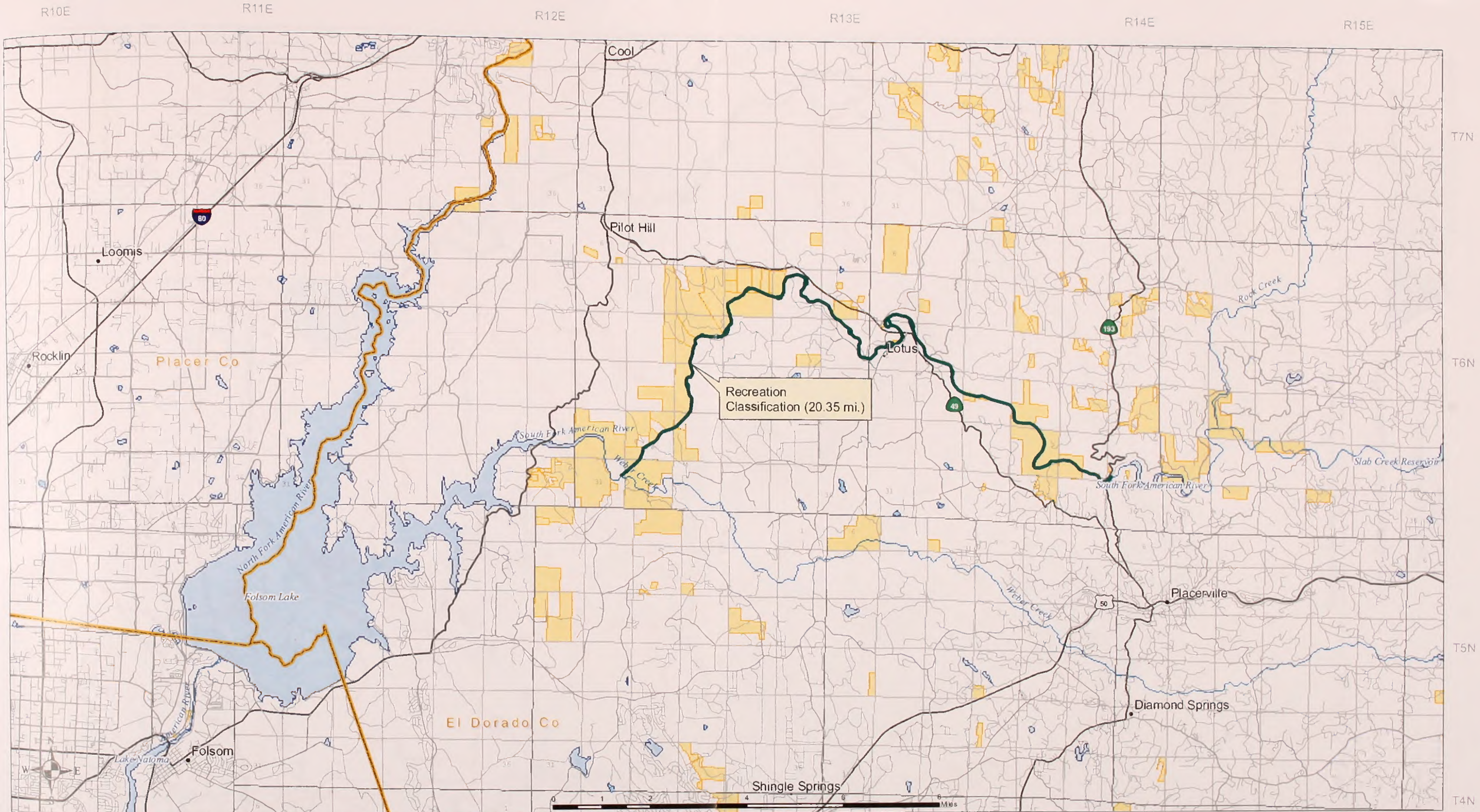


Sierra Resource Management Plan

Recommended Wild & Scenic River
Main and North Fork Mokelumne
(Map 8b)



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- Bureau of Land Management
- County Line
- River Segment Classification**
- No Classification
- Recreation
- Scenic
- Wild

Sierra Resource Management Plan

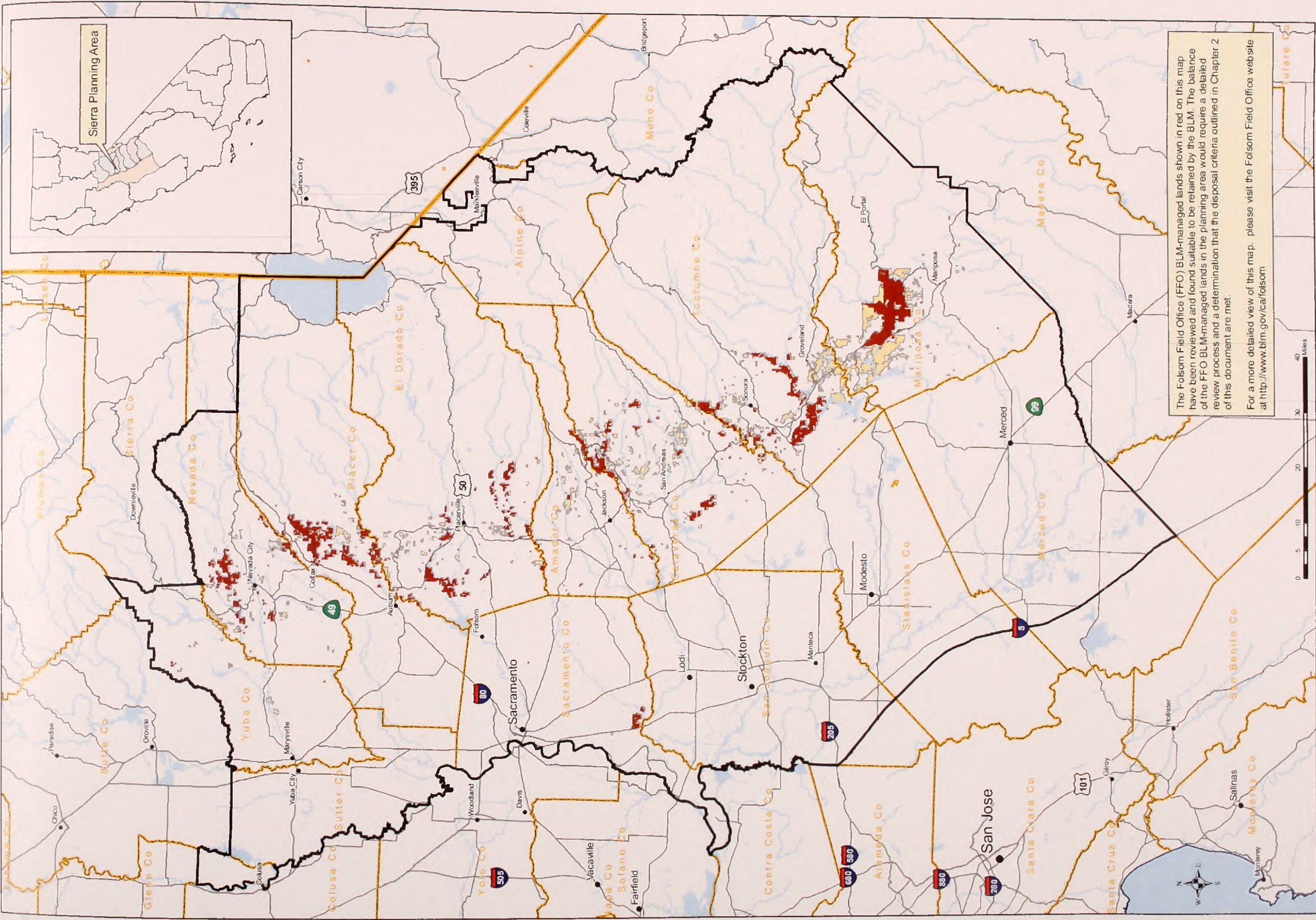
Recommended Wild & Scenic River

South Fork American

(Map 8c)



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Sierra Resource Management Plan

Public Lands to Retain (Map 9)

- Sierra Planning Area
- FFO - managed public land
- FFO - managed public land to retain



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Appendix B. Conservation Strategies

The following conservation strategies have been cooperatively developed by BLM's Folsom Field Office and U.S. Fish and Wildlife Service. These strategies will serve as guideline recommendations for future BLM actions. Implementation of these prioritized goals and avoidance measures will be based on available funding and staff. Avoidance measures are not requirements; when feasible and warranted, BLM would use them to minimize project impacts to special status species.

Anadromous Fish Conservation Strategy

Central Valley steelhead (*Oncorhynchus mykiss*) THREATENED
Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*) THREATENED
Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*) CANDIDATE

Objectives

To sustain and manage viable populations of Chinook salmon (Central Valley spring and fall runs) and steelhead in the planning area by managing factors affecting the distribution, abundance, and quality of habitat of these species, and by minimizing other adverse impacts to the species.

Prioritized Goals

1. Identify and map potential spawning, rearing, and holding areas and migration routes using GIS and aerial photography.
2. Retain salmonid habitat in BLM ownership, with priority on spawning, rearing and holding habitat and migration routes.
3. Use conservation easements and acquisition with willing sellers to protect key habitats on private lands.
4. Maintain healthy contiguous riparian corridors along salmonid streams (see avoidance measure #6 below).
5. Create, enhance, and restore key habitats.
6. Adhere to Impact Assessment below and Avoidance of Adverse Impacts Guidance when planning activities in suitable habitat for the species.
7. Coordinate with CDF and USFS to eliminate the use of retardants that contain cyanide.
8. Reduce sedimentation occurring as a result of activities such as grazing, rights of way, mining, restoration, fire, road construction, OHV use and timber harvest.
9. Participate in the FERC (Federal Energy Regulatory Commission) relicensing process to determine protection, mitigation, and enhancement measures with regard to dam releases and with particular emphasis on flow rates and timing of releases.
10. Develop appropriate management response for fighting fire near salmonid streams. For example, add language to the Folsom Field Office Fire Management Plan discussing preferred alternatives for fighting wild fires near anadromous fish populations in order to protect the habitat during suppression activities. During wildfire, protection of human life and property will take precedence over habitat protection.
11. During prescribed fires in riparian areas identified as important fish habitat, large woody debris near the shoreline that may serve as refugia during high flows should be left in place and should not be burned.

12. Manage grazing intensity, location, and timing to ensure that key habitat is not impaired. In habitat that has been seriously degraded, employ methods such as fencing, temporary non-use, change in the season-of-use, change in preference, etc., to allow for the area to recover.
13. Stream reaches with spawning, rearing, and holding habitat should be withdrawn from mining. Mining in streams that act solely as migration corridors should be restricted from mining during migration periods.

Avoidance of Adverse Impacts

1. Plan and schedule short-term and long-term land management activities to avoid or minimize adverse impacts during key life history periods (adult migration to freshwater, holding, spawning, rearing, and juvenile migration to the ocean).
2. Develop and implement best management practices to prevent or minimize adverse impacts to anadromous fishes from in-stream and stream bank activities associated with mining operations. Identify streams for which in-stream and stream bank activities associated with mining threaten habitat suitability for anadromous fishes.
3. During the land exchange process, assess exchange parcels to determine if there is suitable habitat. Retain appropriate habitat.
4. Incorporate existing BLM guidelines of no retardant within 300 feet of waterways. If possible, near known spawning locations and the tributaries utilized by the fish to get there, avoid retardant drops within 500 feet of the waterway. Protection of human life and property will take precedence over habitat protection during a wild fire.
5. Minimize the loss of anadromous fish spawning habitats and avoid long-term habitat degradation, including migration habitat.
6. Implement a 500' "no disturbance" buffer adjacent to these streams. Actions that should be controlled include grazing, building construction, new roads, OHV routes, wildfire control lines, and fuel breaks (this buffer does not apply to prescribed fires in riparian areas used as a habitat enhancement tool). During wild fire, protection of human life and property will take precedence over habitat protection.
7. Existing roads that are degrading key habitat will be recontoured as near as possible to the original slope and revegetated to slow sedimentation. Exposed compacted soils will be scarified and revegetated or seeded.

Bat Conservation Strategies

Objective

Because of the wide-spread decrease in bat numbers and increasing loss of habitat, BLM Folsom management approach will be an effort to protect all species of bats and their habitats. Conservation of bat roosting and foraging habitats is important to consider when conserving bats on BLM land. Habitats include specific roost and foraging requirements which vary by species, as well as by season and reproductive status.

To sustain and manage viable populations of these bat species by managing factors affecting the distribution, abundance and quality of habitat for these species, and by minimizing adverse impacts to these species.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority can not be met in the short term, other lesser priorities will be completed.

1. Known important and crucial bat habitat areas, with priority on hibernacula and maternity sites, should be held in BLM authority and managed appropriately for species requirements and survival.
2. Lands containing sensitive bat roost will be withdrawn from the general land laws (mining claims, disposal, exchange etc.).
3. Determine and map location and distribution of important bat habitat components, including roosts, potential foraging areas, and natural and artificial water sources. Inventory priorities are: mines and caves, bridges, cliff faces, abandoned buildings, and forested habitat (copses). Use Pat Brown's protocol for bat inventory when appropriate. Survey during the appropriate interval to cover most species using caves and mines. Treat bat roost site information as confidential.
4. Mines being used by major populations and identified special status species will be maintained to ensure plant growth at entrances is cleared and portal or shaft closures are maintained to provide optimal mine temperature and humidity.
5. Install enclosures at roost sites where bats are being disturbed. Camping, fires, parking, vehicle exhaust, partying, and bridge climbing are activities that should be controlled. Examples include, but are not limited to a) fence a portion of Bear Creek Bridge to protect an important Mexican free-tail bat maternity roost between November and February. Conduct a baseline survey in late April/early May. Conduct follow-up surveys after the fence is installed; b) After the methyl-mercury cleanup, gate the entrance(s) to Poore Mine; c) Gate a mine adit in the South Yuba Campground.
6. Assess structure and stability of mines as well as temperature and airflow concerns prior to partial closures or gates constructed. Where appropriate, BLM will use the most current gating specifications for mine features. Other options for protecting bat habitat in abandoned mines would include enclosures or protective fencing. Complete closure of abandoned mines known to support bats will be considered only as a last resort, and be done in consultation with qualified biologists experienced with bats.
7. Include known important roost sites as a priority avoidance locality in the Fire Management Plan.
8. Manage the prescribed fire and fuel reduction program in a manner that is compatible with bat conservation. Examples include: (1) placement of fuel breaks away from important roosts, hibernaculum and maternity colonies; (2) smoke management to prevent drift and settling within ¼ mile of important bat features; (3) protect snags, large trees, and forested habitats (copses). Include fuel reduction and prescribed burning to improve habitat conditions for bats.
9. Work with volunteers to identify and monitor roost sites (members of the caving community, TNC, miners, etc).
10. Adhere to Impact Assessment below (page 4) and Avoidance of Adverse Impacts Guidance (page 4) when planning activities in suitable habitat for the species.
11. Evaluate areas with existing or potential bat habitat for conflicts of use (recreation, grazing) and determine appropriate management schemes (seasonal restrictions, etc.).
12. In caves, install protective measures when known populations are threatened or in decline. These could include gates, enclosures, fences, and possibly cave entrance permit system, or other means to mitigate disruption to bat roost. Maintain cave entrances for bat passage and preserve habitat.
13. Provide access control, such as road closures, trail re-routing, which may be needed to protect some bat roost sites from vandalism or disturbance.
14. As mining buildings, and other surface structures become available (abandoned by claimants) and do not merit destruction, enhance for bat use.
15. Coordinate with Cal Trans to determine important bat roosts at bridges that occur on BLM lands.
16. Support (credible) bat research projects, work with other agencies, BCI, cavers, education groups, etc.

17. Appropriate grazing management schemes to maintain habitat integrity and diversity include such actions as decreasing herd numbers, fencing damaged riparian areas, grazing rotations, etc. Monitor grazing impacts to riparian areas.
18. Near identified bat roosts, mine and quarry ponds will be tested for toxicity. Ponds that contain contaminants, which may be harmful to wildlife, measures will be taken to keep wildlife away from the site until the ponds are cleaned up, drained, or capped.
19. Manage stock ponds to allow for bat foraging.
20. Limestone/marble quarry mining will contain stipulations to protect caves/fissures, and other potential bat habitat, encountered during mining. Quarries with potential roosting site will be inventoried periodically.
21. Identify neighboring land use impacts on sensitive roost sites and integrate protective measures as appropriate or necessary.
22. Strive to acquire lands adjacent to BLM with known roosts for sensitive bat species. Acquisition will only be conducted with willing sellers. Explore the use of conservation easements to protect sensitive bat roost or foraging sites on private lands.
23. Install bat houses and artificial roosts where needed. (Loss of habitat due to wildfires, destruction or loss of building roost, etc.)
24. The prescribed use, amount and schedule of pesticide/herbicide application should be closely adhered to and monitored. The use of pesticides in the Folsom Field Office is extremely limited, but its use should still take into consideration its potential impacts to roosting and foraging bats.
25. To create habitat or to experimentally mitigate for mine closures or if an important feature collapses, attempt to replicate habitat by restoring/ improving ventilation.
26. Provide bat education programs using signs, brochures and presentations.

Avoidance of Adverse Impacts

1. Plan and schedule short-term and long-term land management activities to avoid important bat roosting and foraging areas during crucial breeding and wintering periods.
2. For bridge work, include seasonal restrictions in potential habitat (April-August). If bridges are planned for removal, appropriate seasonal restrictions should apply.
3. Avoid direct mortality or harm to individual bats or colonies.
4. Avoid application and drift of chemical retardants and ignition devices near known colony roost or maternity sites and water (ponds and still water) if possible.
5. Avoid cutting trees with roost characteristics, if possible, and if not an extreme safety hazard, during suppression and rehabilitation. During fuel reduction activities or salvage timber sales, avoid removing trees with roost characteristics (open cavities, loose bark) or limbing/removing only portions of hazard trees.
6. Determine bat presence before abandoned mine closure and bridge removal/work.
7. Avoid important roost sites during prescribed fire. Near important roosts, take actions to minimize smoke and fire impacts (scrape, foam or wet-line around snags or large roost trees prior to burning).
8. During wildfire suppression, attempt to clear brush away from caves, mines, and around snags and large trees. Limb large trees to remove ladder fuels. Human safety takes precedence over habitat protection. Attempt to establish fire breaks with the least amount of removal of snags and large trees.
9. Seasonally restrict prescribed fire in winter and early spring near important winter hibernacula and between April and August near known maternity colonies or roosts. Minimize smoke and fire impacts if they must occur during biologically critical times of the year. For example, if you can fire-off the

portion closest to the area during non-critical season and complete the rest of burn as scheduled or attempt to plan burn around weather conditions with little wind or wind blowing away from crucial habitat areas. Fall burns would be more appropriate.

10. Vegetation should be cleared from choked ponds or stock tanks in October and November.
11. If mine activities are resumed in a previously inactive mine, measures such as seasonal restrictions should be taken to minimize bat disturbance.
12. During timber harvest, consider habitat enhancements for lost roost sites (snag creation, drilling cavities in trees, bat boxes, etc).
13. Minimize, to the extent feasible, and mitigate for the loss of bat habitats.
14. Avoid long-term habitat/water quality degradation.

Delta Native Fishes

Sacramento splittail, hitch, blackfish, and Sacramento sucker)

Conservation Strategy

Objective

To sustain and manage the river and riparian ecosystem to such an extent as to support viable reproduction of the Sacramento splittail (spittail), hitch, blackfish, and Sacramento sucker, by enhancing winter spawning habitat through restoration and management of winter-flood areas and the Cosumnes River flood plain west of Highway 99.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in order by priority of importance. In instances where a higher priority cannot be met in the short term, other lesser priorities will be completed.

1. Within the watershed, continue to acquire habitat and restorable habitat in a manner consistent with the existing riparian restoration goals of the CRP.
2. Address the following factors in all planning documents that address Valley Riparian habitat and flood-plain management: (a) minimize the loss of potential CRP fish habitat and avoid long-term degradation; (b) plan and schedule short-term and long-term land management actions to enhance potential CRP fish habitat; (c) restore the Cosumnes River and its tributaries to the proper functioning condition and remove impediments that threaten survivorship of the species, (d) include set-back levees as a project alternative, or part of alternatives, for all actions that involve levee placement, enhancement, restoration, or protection; (e) develop maintenance guidelines, in partnership with FWS and CDFG, to reduce adverse effects of routine maintenance on CRP fishes. This applies to all planning documents that are currently in preparation and to existing documents that will be updated, or will have this strategy appended to them.
3. Identify winter-flood areas that support breeding occurrences of the CRP fishes and identify potential spawning areas that could be enhanced to support breeding occurrences
4. Conduct, or facilitate periodic surveys that are tied to flood events and drought cycles to identify the status of the CRP fishes, with an emphasis on splittail, on the Cosumnes River Preserve.
5. Complete the Cosumnes River Preserve (CRP) Management Plan to reflect management and ecosystem needs of the Cosumnes River Preserve (CRP) fishes, or append this strategy to the plan.

6. Adhere to Impact Assessment below (page 2) and Avoidance of Adverse Impacts Guidance (page 3) when planning activities in suitable habitat for the species.
7. Identify areas that could be enhanced to support foraging habitat for juvenile CRP fishes.
8. Identify all levees in the CRP that potentially could be set back to enhance or provide flood protection to the land side of the levee while increasing CRP fishes spawning habitat. Include farming options, such as rice, corn, and tomato farming, for the river-side lands that could be flooded during high-rainfall years.
9. Continue to facilitate and partner in fisheries research, with emphasis on: (a) spawning occurrences by the species, (b) spawning success, (c) entrapment, (d) barrier effects, (e) mortality factors, (f) selenium, mercury, and pesticide concentrations in the substrate and water column, and (g) population viability analysis.
10. Coordinate with the North Delta Improvements Group in design and implementation of a study to set back levees at Staten Island, and assist in implementation of their recommendations.
11. Examine funding and partnerships: CRP partners include The Nature Conservancy; California Department of Fish and Game; Ducks Unlimited, Inc.; California Department of Water Resources; Sacramento County Department of Regional Parks, Open Space and Recreation; and Wildlife Conservation Board.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity of the species when restored habitat becomes available in the future.

1. Conserve the maximum amount of delta native fishes habitat when planning actions in habitat.
2. After completion of construction activities, BLM will ensure removal of any construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting forage or shelter plants and constructing temporary refugia.
3. Explore options that protect banks without the use of traditional structural bank protection measures such as rock riprap. For example, reconfigure levees, including levee setbacks, construct secondary levees outside the inner levees, and realign levees to provide wider channels and to allow natural river meandering; create shallow underwater habitats (shallow levee slopes) at waterline for fish spawning and foraging habitat (flooded vegetation) on levees; and enhance borrow areas by creating shallow or seasonally flooded habitat near the river channel at a safe distance from the levee. When appropriate, include use of borrow inside levees to create backwaters and areas of shallow flooded vegetation for fish spawning habitat. Created backwaters and shallow flooded areas should include contours that minimize stranding.
4. Banks that are riprapped or require riprapping should include scalloping, herbaceous vegetation, and LWD components. These components should use stockpiled mature riparian trees that require removal prior to riprap construction.

**Forest Raptor Conservation Strategy for
Bald eagle (*Haliaeetus leucocephalus*), California spotted owl
(*Strix occidentalis occidentalis*), and northern goshawk
(*Accipiter gentilis*)**

Objective

To sustain and manage forest ecosystems to such an extent as to support and maintain viable populations of the bald eagle, California spotted owl, and northern goshawk (forest raptors) on BLM lands in the planning area by managing factors affecting the distribution, abundance, and quality of habitat of these species, and by minimizing impacts to breeding during forest raptor nesting seasons.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective for forest raptors and are in priority of importance. In instances where a higher priority cannot be met in the short term, other lesser priorities will be completed.

1. Protected Activity Centers
 - a. Protect nesting areas by identifying and mapping (using GIS) PACs 600 acres in size for the California spotted owl, northern goshawk and bald eagle, consisting of the best available habitat, including known and suspected nest stands, in as compact a unit as possible.
 - b. Limit activities in PACs to those designed to improve the suitability or integrity of the PAC or to protect additional habitat within the home range of the pair using the PAC.
2. Hold bald eagle, goshawk and California spotted owl habitat areas in BLM authority, with priority on nesting, roosting, and foraging sites.
3. Address fire hazard by treating fuels in the wildland urban interface and in old forest areas characterized by high fire hazard.
4. Survey (to protocol) suitable bald eagle, goshawk and spotted owl habitat with unknown occupancy prior to undertaking vegetation treatments, and conduct site-specific consultation with the FWS if the bald eagle are detected.
5. Conduct protocol surveys to establish the location of the nest site when stand-altering activities are planned adjacent to a PAC, and consult with FWS if activities may affect the bald eagle.
6. Identify and protect bald eagle winter roosts.
7. Map old growth forests using GIS to assist in management decisions relative to goals 1-4, 8, 10, 12, 14-16, and 20.
8. Monitor nesting success for the 3 years following stand-altering activity in a PAC. Use protocol consistent survey methods.
9. Identify known and potential bald eagle, northern goshawk and California spotted owl activity centers as important for acquisition. Acquisition will only be conducted with willing sellers. Explore the use of conservation easements to protect sensitive forest raptor habitats located on private lands.
10. When conducting timber harvests in PACs, limit harvest to 25 percent or less of the mid-sized trees (18 to 24 inch dbh), leaving the six largest trees in the stand, and maintaining a canopy closure of at least 70 percent. Nest trees will be protected by a 25-acre "no cut" buffer.

-OR-
11. When conducting timber harvests in PACs, limit harvest to one out of every four large trees (greater than 24 inch dbh) and maintaining a canopy closure of at least 70 percent. Nest trees will be protected by a 25-acre "no cut" buffer.
12. Adhere to the impact assessment guidance below (page 3) and avoidance of adverse impacts guidance (page 4) when planning activities in suitable habitat for forest raptors.

13. Provide for connectivity between spotted owl pairs on BLM and USFS lands when possible.
14. Identify and protect occupied, as well as suitable but unoccupied, northern goshawk habitat.
15. Determine appropriate nest buffer size for the goshawk. Implement buffer protection consisting of the best available habitat, including known and suspected nest stands.
16. Reduce risk of stand-replacing wildfire using mechanical thinning and/or prescribed fire at a rate no greater than 5 percent surface area per year, and not to exceed 20 percent in ten years, in PACs.
17. Coordinate with the Forest Service on efforts to conduct fuels treatments in PACs for BLM lands containing a shared property line with the Forest Service.
18. Provide bald eagle, northern goshawk and California spotted owl education programs where/when needed by posting signs, handing out published material, and offering presentations.
19. Provide suitable habitat in the most used core area surrounding the PACs for all forest raptors.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity in the species when restored habitat becomes available in the future.

1. Integrate protective measures into projects as appropriate or necessary, based on type, extent, and duration of land management activities proposed to occur.
2. Assure bald eagle recovery needs, especially nest-site protection, are met in the areas potentially affected by projects.
3. Avoid management activities and recreation in PACs and winter roosts detected during surveys.
4. Identify opportunities to protect and conserve forest raptors and their habitats. Conserve the maximum amount of forest raptor habitat when planning actions in habitat. Minimize, to the extent feasible, loss of forest raptor habitats and avoid long-term habitat degradation.
5. Design projects to minimize mortality to forest raptors.
6. Survey suitable bald eagle, northern goshawk and spotted owl habitat with unknown occupancy prior to undertaking vegetation treatments or management activities in the forest and conduct site-specific consultation with the FWS if the bald eagle is detected.
7. Use established protocols for surveys to avoid harming or harassing bald eagles, northern goshawks or California spotted owls.
8. Identify avoidance areas based on survey results and establishment of PACs
9. Do not conduct stand altering activities during the breeding season within 2 miles of bald eagle nest sites (January 1 through July 31) or within 0.25 miles of California spotted owl or northern goshawk nest sites (March 1 through August 31) to avoid harassment resulting in disrupted reproduction and/or loss of reproduction.
10. Where the presence of young indicate a nest is nearby but the nest cannot be located, use the location of the young as the nest site.
11. Avoid land management activities within ¼ mile of bald eagle winter roosts from November 1 through January 30
12. Do not commence management activities in PACs, or within ½ mile of winter roosts, unless consultation with the FWS has been completed on the action.
13. Follow avoidance and minimization measures in all site-specific biological opinions from the FWS.
14. If bald eagles are found within ½ mile of management activities that have not undergone consultation with the FWS, cease all activities until consultation with the FWS has been completed. Report any new detections and any take of these species to the FWS.

15. After completion of any construction activities, ensure removal of any construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as retiring and reconfiguring roads and replanting with native seed mix.
16. Near PACs, take actions to minimize smoke and fire impacts during fire suppression activities where feasible or practical. Avoid cutting trees that meet the requirements for bald eagle, northern goshawk and California spotted owl nesting or roosting. Large snags should be left in place if possible.
17. Avoid application and drift of chemical retardants and ignition devices near known nest sites if possible.
18. If areas in PACs must be treated to achieve fuels objectives for the urban wildland intermix zone, limit treatments to mechanical clearing of fuels. Use piling to treat surface fuels during initial treatment.
19. Disturbances such as thinning, planting, and other rehabilitation measures should be avoided in the PACs and during the breeding season of bald eagles, northern goshawks and California spotted owls. Reseeding and erosion control measures should be taken. Large downed logs should be left in place as they may contribute to the value of foraging habitat.
20. During forest and fuel break clearing activities, avoid trees with nest site characteristics. Remove limbs only on threatening portions of hazardous trees, in order to maintain a thick canopy. Attempt to establish fire breaks with the least amount of removal of snags and large trees.
21. Avoid prescribed fires and using ignition devices in identified PACs.
22. Seasonally restrict (disallow) prescribed fire between March 1 and June 30 near PACs. Minimize smoke and fire impacts if they must occur during biologically critical times of the year.
23. Provide access control, such as road closures and trail re-routing, to protect forest raptor nesting, roosting, and foraging sites from vandalism and disturbance.
24. Avoid removal of trees and snags with appropriate nesting, roosting, or foraging characteristics unless the tree is particularly hazardous. If possible, limb a hazardous tree instead of removing the entire tree. Include seasonal restrictions for hazard tree work in PACs.
25. Avoid constructing roads in or near forest raptor habitat. If a road must be built, attempt to build the road on the outskirts of the habitat to avoid forest fragmentation.
26. Restrict off road vehicle use near known bald eagle, northern goshawk and spotted owl PACs during the breeding season.

**California Red-Legged Frog (*Rana aurora draytonii*) and
Foothill Yellow-Legged Frog (*Rana boylei*)
Conservation Strategy**

Objectives

To sustain and manage viable populations of the California red-legged frog and foothill yellow-legged frog in the planning area. Stabilize and manage the California red-legged frog population at Spivey Pond. Repatriate the California red-legged frog to suitable habitat on BLM lands.

Prioritized Goals

1. Designate the Spivey Pond ACEC.
2. Identify sites where deleterious non-native predators are present. Prioritize where control efforts should take place.
3. For all known occurrences of the California red-legged frog on BLM land, control/eliminate deleterious non-native species/predators (plants, vertebrates) using methods that are determined to be the most effective.

4. Develop a sterilization protocol for equipment used in either California red-legged frog or Foothill yellow-legged frog habitat.
5. Identify drainages that are appropriate to withdraw from mining and land actions (disposal) in California red-legged frog core areas and other areas that have been identified as important habitat, such as connectivity areas between core areas.
6. Maintain updated maps of known California red-legged frog populations and purchase conservation easements or parcels from willing sellers where acquisitions may protect these populations.
7. Within suitable habitat of the California red-legged frog, create, enhance, and protect existing habitat: Create ponds in existing grazing allotments and other suitable areas; enhance existing ponds by re-engineering to allow draining; and consider scooping out existing ponds that have filled in and partially filling ponds that support bullfrogs. Refer to Recovery Plan Appendix to determine suitable pond design. The highest priority for creation and enhancement should be within 2 miles of existing populations.
8. Within watersheds, identify suitable habitat that includes a mosaic of breeding habitat interspersed with a matrix of barrier free dispersal habitat. For the California red-legged frog, this is optimally in the form of pond complexes¹. For the foothill yellow-legged frog, this is in the form of protected streambed and riparian edge.
9. Adhere to Impact Assessment below (page 3) and Avoidance of Adverse Impacts Guidance (page 3) when planning activities in suitable habitat for the species.
10. Develop and implement timber harvest guidelines to reduce the adverse effects of timber harvest activities on the California red-legged frog and foothill yellow-legged frog and their habitat.
11. Test grazing strategies to determine grazing regimes that are most compatible with California red-legged frog breeding, survival, and habitat suitability. Develop and implement grazing guidelines or enhance existing guidelines for public lands which have been identified as having habitat quality concerns due to livestock grazing or lack of livestock grazing.
12. Develop and implement watershed management and protection plans for each watershed. These plans will be prioritized for the Calaveras, Mokelumne, Upper Yuba and Merced River watersheds and Spivey Pond (North Fork Weber Creek) because these areas are focal areas conducive to recovery of the California red-legged frog. These include lands in recovery core areas, lands with several adjoining grazing leases, watersheds with existing populations, and areas with large, contiguous BLM parcels.
13. Once suitable areas are identified and partnerships are formed, identify repatriation areas and reintroduce California red-legged frogs in collaboration with FWS.
14. Develop and strengthen funding and partnerships with private parties, local, state, and federal agencies, and conservation organizations. Examples include lessees, California Cattlemen's Association, The Nature Conservancy, Trust for Public Lands, FWS Partners Program or Endangered Species Recovery Program, Safe Harbors, Natural Resources Conservation Service, American River Conservancy, local open space districts and county trust lands, and California Department of Fish and Game, California Rangelands Trust, Packard Foundation.

Avoidance of Adverse Impacts

1. Plan and schedule short-term and long-term land management activities to avoid yellow-legged and red-legged frog breeding periods where suitable breeding habitat exists.

¹ Pond complexes ideally include 3 ponds within 1 1/4 miles. Dense chaparral habitat is considered unsuitable for the frogs. However chaparral with interspersed grasslands would be acceptable habitat within a pond complex.

2. Refer to the watershed management and protection plan in the affected area to identify additional protective measures.
3. Include a stipulation in grazing leases that require placement of salt blocks, protein blocks, scratch bags, and other dry mineral or pesticide treatments at least 500 feet from riparian areas and stock ponds.
4. Follow sterilization protocol in goal #3 identified above.
5. During land exchange process, assess exchange parcels to determine if there is suitable habitat. Retain appropriate habitat.
6. Incorporate existing BLM guidelines of no retardant within 300 feet of wetlands. If possible in core areas, avoid retardant drops within 500 feet of wetlands.
7. Avoid drafting water out of Spivey Pond during fire fighting.
8. Minimize the loss of yellow-legged and red-legged frog habitats and avoid long-term habitat degradation, including red-legged frog estivation habitat.

Giant Garter Snake (*Thamnophis gigas*) Conservation Strategy

Objective

To sustain and manage a viable population of the giant garter snake (GGS) at the Cosumnes River Preserve (preserve) through conservation and management of GGS estivation, hibernation, and foraging habitats in the lower Cosumnes River watershed (lower watershed), South and West of Sloughouse.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority cannot be met in the short term, other lesser priorities will be completed.

1. Within the Lower Cosumnes Watershed, create, enhance, and acquire habitat, and protect existing habitat.
2. Protect the Valinsen Ranch population of GGS through monitoring, pond and range management, and research.
3. Create flood refugia adjacent to suitable GGS habitat in the lower watershed, and allow the refugia to become occupied by burrowing mammals.
4. Collaborate with The Nature Conservancy to develop management strategies for Ludwigia to optimize GGS basking and foraging habitat.
5. Rotate perennial ponds to seasonal ponds periodically to remove non-native, predatory fish that could impact GGS populations by removing suitable forage species and predating on GGS young. Include retention of sustained perennial ponds adjacent to drained perennial pond as a required component of pond management, to provide displaced GGS with suitable foraging habitat and to protect them from the hazards of migrating out of former habitat in search of prey.
6. Collaborate with FWS during the development of the Cosumnes River Preserve Management Plan. The plan should reflect management and ecosystem needs of the GGS and address the following factors: (a) minimize the loss of GGS habitat and avoid long-term degradation; (b) plan and schedule short-term and long-term land management activities to avoid impacts to GGS estivation, hibernation, and foraging areas; and (c) identify and remove any non-native plant species that threaten habitat suitability.

7. Test grazing strategies to determine grazing regimes that are most compatible with GGS breeding and survival and habitat suitability, and develop and implement grazing guidelines or enhance existing guidelines for lands in the Cosumnes River Preserve which have been identified as having habitat quality concerns due to the presence or absence of livestock grazing.
8. Adhere to the impact assessment guidance below (page 2) and avoidance of adverse impacts guidance (page 3) when planning activities in suitable habitat for the species.
9. Develop maintenance guidelines (for example road work, mowing, ditch work, pond draining) in partnership with FWS, to reduce adverse effects of routine maintenance on giant garter snakes and their habitat.
10. Develop Memoranda of Agreement with neighbors and partners in the Cosumnes River watershed establishing a limit on selenium supplements in cattle feed to 0.1 parts per million to reduce Selenium outflow into GGS habitat and the San Joaquin River Delta.
11. Allow for GGS research regarding genetics, population dynamics, response to pond management and grazing, mortality factors, distribution, and viability analysis.
12. Examine funding and partnerships: Partnerships with lessees, California Cattlemen's Association, land trust organizations, FWS Partners Program or Endangered Species Recovery Program, Safe Harbors, NRCS (Natural Resources Conservation Service), and CDFG. Grants from California Rangelands Trust, Packard Foundation, and other funding sources. (BLM to adjust/modify this list to reflect partnership associations.)

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Conserve the maximum amount of GGS hibernation, estivation, and foraging habitat when planning actions in habitat in the lower watershed. Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided GGS habitat in or adjacent to the project area as Environmentally Sensitive Areas. These areas should be avoided by all construction personnel.
2. Avoid construction activities within 1,000 feet from the banks of GGS aquatic habitat, unless formal consultation with the FWS has been completed on the action. Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
3. Avoid mowing with blades or chains within 1,000 feet of GGS aquatic habitat, and utilize monofilament mowers in this area whenever mowing is required in estivation habitat (uplands adjacent to perennial water).
4. Construction activity within habitat should be conducted between May 1 and October 1. This is the active period for GGS and direct mortality is lessened because snakes are expected to actively move and avoid danger. Between October 2 and April 30 contact the Service's Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize or avoid mortality.
5. Construction personnel must receive Service-approved worker environmental awareness training prior to working in GGS habitat. This training instructs workers to recognize the snake and its habitat(s) and is intended to protect the workers from accidentally harming or killing the species.
6. Twenty-four hours prior to construction activities, the project area should be surveyed for GGS. The survey of the project area should be repeated if a lapse in construction activity of two weeks or greater has occurred. If a GGS is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake will not be

harmed. Report any sightings and any incidental take to the Service immediately by telephone at (916) 414-6620.

7. Any dewatered habitat should remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat.
8. After completion of construction activities, BLM will ensure removal of any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting species removed from banks or replanting emergent vegetation in the active channel.
9. Identify and consider neighboring land use impacts on hibernation, estivation, and foraging habitat and integrate protective measures as appropriate or necessary.

California Horned Lizard (*Phrynosoma coronatum frontale*) Conservation Strategy

Objective

To sustain and manage viable populations of the California horned lizard by managing factors affecting the distribution, abundance, and quality of habitat of these species, and by minimizing adverse impacts to the species.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority cannot be met in the short term, other lesser priorities will be completed.

1. Protect known populations of California horned lizard through monitoring, habitat management (OHV closure, restoration, fire restrictions, etc.), and research, with a particular emphasis on the Pine Hill Preserve population. Monitoring and research efforts should include both California horned lizard and ants (native ant protection and Argentine ant control).
2. Acquire additional California horned lizard habitat in the Carbondale-Mesa area and other suitable areas as populations are detected.
3. Adopt modified fire suppression plans for ecosystems that support the California horned lizard and associated rare plants, which includes restrictions on the use of heavy equipment for fire suppression. Footnote: Refer to the plant strategy for more details.
4. Utilize research results for adaptive management.
5. Adhere to the impact assessment guidance below (page 3) and avoidance of adverse impacts guidance (page 3) when planning activities in suitable habitat for the species.
6. Identify, map and retain potential California horned lizard habitat.
7. Add the Carbondale-Mesa 20-acre parcel to the lone manzanita ACEC.
8. Support research regarding the geographic range of the California horned lizard on public land, natural history, specific breeding requirements, and protection against Argentine ant infestations (deny all research requests that involve introduction of Argentine ants).
9. Restrict the use of pesticides in or near California horned lizard habitat, unless pesticides are necessary for conservation of the species.
10. Leave large rocks and downed logs in place for predator protection, basking, and hibernation, except in urban-interface fuel breaks.
11. Where native ants and appropriate soils exist, create microhabitats by making clearings in riparian woodlands or by establishing trails or fuel breaks.

12. Coordinate with CDF to eliminate the use of retardants that contain cyanide.
13. Examine funding and partnerships: Partnerships with private parties, local, state, and federal agencies, and conservation organizations. Examples include The Nature Conservancy, Trust for Public Lands, FWS Partners Program or Endangered Species Recovery Program, Safe Harbors, Natural Resources Conservation Service, American River Conservancy, local open space districts and county trust lands, California Department of Fish and Game, and Packard Foundation.
14. Provide California horned lizard education programs where/when needed by posting signs, handing out published material, or offering presentations.
15. If prescribed fire is to be used on the Pine Hill Preserve, consider incorporating into a burn plan beneficial components for the California horned lizard (i.e., fire can be used to create microhabitats that enhance California horned lizard habitat).
16. Maintain burrowing mammal populations (horned lizards use mammal burrows for protection and winter hibernation, although they can also construct their own burrows).
17. Educate private landowners adjacent to California horned lizard habitat about the deleterious effects of pesticides and provide alternatives for pest removal.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Conserve the maximum amount of California horned lizard habitat when planning actions.
2. Although creating clearings in vegetation can enhance California horned lizard habitat, conserve enough vegetation to allow for protection against predators and extreme heat.
3. When planning projects, allow for a substantial amount of rocks and downed logs to be left in place for predator protection, basking, and hibernation.
4. Plan and schedule short-term and long-term land management activities to avoid California horned lizard breeding periods (May-August) where suitable breeding habitat exists.
5. Identify and consider neighboring land use impacts on sensitive habitats and integrate protective measures as appropriate or necessary.
6. When addressing vegetation management on the Pine Hill Preserve and Lone Manzanita ACEC, consider alternatives that will enhance California horned lizard habitat.
7. Minimize the loss of California horned lizard habitats and avoid long-term habitat degradation.

Limestone Salamander (*Hydromantes brunus*) Conservation Strategy

Objectives

1. Prevent all surface-disturbing activities which would alter or degrade confirmed or potential limestone salamander habitat on BLM lands.
2. Maintain vegetative cover in the Area of Critical Environmental Concern (ACEC) within specification outlined in the *Management Plan for the Limestone Salamander Area of Critical Environmental Concern* (ACEC Management Plan) (Lehman 1989).
3. Identify additional limestone salamander occurrences and consolidate BLM holdings within the species' range. Adjust ACEC boundaries as necessary to increase habitat protection.

4. Promote public use of the Limestone Salamander ACEC which is compatible with general wildland management goals and which do not conflict with the limestone salamander's habitat needs. Integrate management of the ACEC with other BLM programs in the Merced River corridor to meet this objective.

Prioritized Goals

1. Purchase conservation easements or parcels from willing sellers where acquisitions may protect existing occurrences. Top priority will be the purchase or exchange of 320 acres of land in Hell Hollow, containing four confirmed limestone salamander occurrences.
2. Coordinate with all agencies with fire protection or support responsibility in the Limestone Salamander ACEC to avoid the use of toxic retardants within 500 feet of habitat.
3. Amend current Limestone Salamander ACEC boundaries to include one confirmed limestone salamander occurrence site which is Bureau-administered but lies outside existing ACEC boundaries. Add to the ACEC a 160-acre parcel defined as the SW 1/4 of Section 6, T.4S, R.17E., MDM. In the future, amend ACEC boundaries as necessary to include other limestone salamander occurrences on BLM land.
4. Permit no land ownership adjustments which would reduce or adversely affect BLM's manageable land base in the Limestone Salamander ACEC.
5. Permit no surface-disturbing activities in confirmed or potential limestone salamander habitats. Coordinate with mining claimants operating in the Limestone Salamander ACEC, through Plans of Operations and on-site inspections, to mitigate potential impacts to limestone salamanders resulting from mineral exploration and development.
6. Approve no utility rights-of-way in the Limestone Salamander ACEC without review, analysis, and mitigation of potential impacts to limestone salamanders.
7. Adhere to Impact Assessment below (page 2) and Avoidance of Adverse Impacts Guidance (page 3) when planning activities in suitable habitat for the species.
8. Allow no new road rights-of-way which would improve or encourage access to the ACEC, unless they are necessary for access to existing or approved developments. With the exception of BLM's primary access road on the north side of the Merced River, maintain existing roads in their current primitive conditions.
9. Designate the Limestone Salamander ACEC as a priority fire suppression area. Advise all agencies with fire protection or support responsibility in the ACEC and amend all existing cooperative fire protection agreements, protection plans, and prescribed burn plans of and between these agencies with regard to suppression priorities and special procedures.
10. Permit no commercial or domestic fuelwood cutting in the ACEC.
11. Inventory all suitable but unconfirmed habitat on BLM lands for the presence of limestone salamanders.
12. Permit no commercial timber harvesting in the Limestone Salamander ACEC.
13. Examine funding and partnerships with private parties, local, state, and federal agencies, and conservation organizations.

Avoidance of Adverse Impacts

1. Plan land management activities to avoid limestone salamander habitat, when possible, in and adjacent to known and potential occurrences. When habitat cannot be avoided, schedule activities when salamanders are not active on the surface (during the dry season).
2. Minimize loss of limestone salamander habitats and avoid long-term habitat degradation.

3. Prohibit the use of pesticides, herbicides, or other biocides or toxicants which could adversely affect limestone salamanders or their prey base.
4. Develop and implement best management practices to prevent or minimize adverse impacts to limestone salamanders from access and related activities associated with mining operations. Identify habitat for which access associated with mining could threaten habitat suitability for the limestone salamander.
5. Avoid retardant within 500 feet of known occurrences and potential habitat.
6. Follow the Fire Management Guidance in the ACEC described in Appendix IV of the ACEC Management Plan.
7. Allow prescribed burning for range and wildlife habitat improvements in the ACEC only in accordance with the guidelines described in Appendix IV of the ACEC Management Plan (attached X).

Pacific Fisher (*Martes pennanti*) Conservation Strategy

Objective

To sustain and manage the mixed evergreen forest ecosystem to such an extent as to support viable populations of the Pacific fisher (fisher), through conservation of denning, resting, and foraging habitats on BLM lands.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority cannot be met in the short term, other lesser priorities will be completed.

1. Identify and map potential denning areas and old growth forests using GIS.
2. Hold Pacific fisher habitat in BLM authority, with priority on resting, foraging, and denning sites, and manage those areas appropriately for fisher requirements and survival.
3. In the mixed evergreen forest, manage habitat within 500 feet of riparian areas to support at least one 36-inch diameter-at-breast-height (dbh) tree per acre, and at least one snag of similar or greater diameter. If the forest will not generate trees of 36 inches dbh, then manage the forest to retain at least the largest snag and the largest live green tree per acre. Adjust the 500-foot requirement as information on fisher reproductive biology relative to disturbance becomes available.
4. Maintain forested lands with four trees of 32 inches dbh or greater (or, if not available, the four largest trees), one wolf tree, and the two largest snags per acre.
5. Limit activities within 500 feet of den trees to actions designed to improve the suitability of the denning area. Adjust the 500-foot requirement as information on fisher reproductive biology relative to disturbance becomes available.
6. Allow for viable prey populations, including reestablishment of porcupines.
7. Provide for connectivity between Pacific fisher habitat on BLM and USFS lands when possible.
8. Adhere to the impact assessment guidance below (page 2) and avoidance of adverse impacts guidance (pages 3) when planning activities in suitable habitat for Pacific fishers.
9. Reduce risk of stand-replacing wildfire using mechanical thinning and/or prescribed fire at a rate no greater than 5 percent surface area per year, and not to exceed 20 percent in ten years, in Pacific fisher habitat. Fuel breaks should not be constructed in forested areas and should be restricted to widening of existing residential access roads.
10. Fisher resting, foraging, and denning habitat areas located on private land will be considered a priority when addressing acquisition of parcels. Potential fisher habitat corridors that may link the isolated populations will also be identified as important for acquisition; however, acquisition will only be

conducted with willing sellers. Explore the use of conservation easements to protect sensitive fisher habitat located on private lands.

11. Coordinate with the Forest Service on efforts to conduct fuels treatments in pacific fisher habitat for BLM lands containing a shared property line with the Forest Service.
12. Provide Pacific fisher education programs where/when needed by posting signs, handing out published material, and offering presentations.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Integrate protective measures into projects as appropriate or necessary.
2. Minimize, to the extent feasible, loss of fisher habitats and avoid long-term habitat degradation.
3. Plan and schedule short-term and long-term land management activities to avoid important fisher denning, foraging, and resting areas, particularly during crucial breeding and wintering periods.
4. Through cooperative efforts, develop inventory and monitoring at crucial breeding and wintering sites.
5. Identify opportunities to protect and conserve fishers and their habitats.

Program Specific Avoidance Measures

Fire

Wildfire: Identify important resting and denning sites in the Field Office Area and include as priority avoidance locality in the Fire Management Plan. Near important sites, take actions to minimize smoke and fire impacts during fire suppression activities where feasible or practical. Avoid cutting trees that meet the requirements for resting sites (conifers with a dbh of 30 inches or greater and oaks with a dbh of 9 inches or greater) or denning sites (conifers with a dbh of 31 inches or greater and oaks with a dbh of 24 inches or greater). Canopy closure should remain at 88% for potential resting areas and 80% at potential denning areas when possible. Large snags should be left in place if possible. Avoid application and drift of chemical retardants and ignition devices near known den sites if possible. Avoid fuel treatments in den site buffers² to the extent possible. If areas in den site buffers must be treated to achieve fuels objectives for the urban wildland intermix zone, limit treatments to mechanical clearing of fuels. Treat ladder and surface fuels over 85 percent of the treatment unit to achieve fuels objectives. Use piling or mastication to treat surface fuels during initial treatment. Burning or piled debris is allowed (Sierra Nevada Forest Plan Amendment, 2001). Maintenance, rehabilitation and/or habitat restoration: Disturbances such as thinning, planting, and other rehabilitation measures should be avoided in den site buffers if possible. Reseeding and erosion control measures should be taken. Large downed logs should be left in place as they may be used for resting or denning sites.

Prescribed Fire: Forest and fuel break clearing activities will consider avoiding trees with resting or denning characteristics. Removal of limbs will only take place on portions of hazardous trees in order to maintain a thick canopy. Avoid prescribed fires and using ignition devices in identified den site buffers. Seasonally

² Fisher den sites are defined as 700-acre buffers consisting of the highest quality habitat (CWHR size class 4 or greater and canopy cover greater than 60 percent) in a compact arrangement surrounding verified fisher birthing and kit rearing dens in the largest, most contiguous blocks available (Sierra Nevada Forest Plan Amendment, 2001).

restrict prescribed fire between March 1 and June 30 near identified natal and maternal dens. Minimize smoke and fire impacts if they must occur during biologically critical times of the year. Attempt to establish fire breaks with the least amount of removal of snags and large trees.

Recreation

Develop appropriate management plans to address recreation activities including seasonal restrictions, group size, duration, and repetition restrictions. Evaluate areas with existing or potential fisher habitat for conflicts of use and determine appropriate management schemes (seasonal restrictions, etc.). Areas of concern would be late seral stage forests, forests with dense canopies, riparian corridors, and large wooded areas (with large snags). Provide access control, such as road closures and trail re-routing, to protect fisher resting, denning, or foraging sites from vandalism and disturbance.

Rights-of-Way

Avoid removal of trees and snags with appropriate resting or denning characteristics unless the tree is particularly hazardous. If possible, limb a hazardous tree instead of removing it. Include seasonal restrictions in den site buffers (March 1 - June 30). Avoid constructing roads near fisher habitat. If a road must be built, attempt to build the road on the outskirts of the habitat to avoid forest fragmentation.

Timber, Shrub, Grassland, Riparian, & other land management

Avoid removal of trees and snags with resting or denning characteristics and consider habitat enhancements for lost sites, such as snag creation. Maintain a canopy closure of 88% in potential resting habitat and 80% in potential denning habitat. If possible, avoid making logging roads which may result in forest fragmentation. Riparian areas that may serve as potential corridors should be maintained, restored, and enhanced where possible. Native plant revegetation projects should be implemented when appropriate. Snag density and characteristics should be periodically monitored.

Red Hills Roach Conservation Strategy

Objective

To sustain and manage viable populations of the Red Hills roach by managing factors affecting the distribution, abundance, and quality of habitat of this species, and by minimizing adverse impacts to the species.

Prioritized Goals

1. Reduce sedimentation from roads that may be impacting Red Hills Roach and other sensitive species. Examples include but are not limited to sections of Serpentine Loop Road.
2. Update the Fire Suppression Plan to include avoidance of use of heavy equipment in riparian areas in the Fire Suppression Plan.
3. Include area on East side of Don Pedro as part of the ACEC. This area has recently been surveyed and found to contain Red Hills roach as well as rare plants.
4. Establish trail construction standards that include riparian and sensitive species buffers.
5. Establish trail maintenance standards to minimize erosion, and sediment delivery into riparian systems.

6. Withdraw the Red Hills ACEC from mineral entries.
7. Adhere to Impact Assessment below (page 1) and Avoidance of Adverse Impacts Guidance (page 2) when planning activities in suitable habitat for the species.
8. Support research to determine the geographic range of the Red Hills roach on public land.
9. Take measures, such as fencing, to reduce riparian degradation on the remaining grazing lease in the Red Hills.
10. Continue to comment as a concerned landowner regarding private/local government uses or proposals that may be contributing to water quality degradation in the Red Hills.
11. Continue acquisition of properties adjacent to the Red Hills that appear important to the Red Hills roach.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Conserve the maximum amount of Red Hills roach habitat when planning actions.
2. Identify and consider neighboring land use impacts on sensitive habitats and integrate protective measures as appropriate or necessary.
3. Minimize the loss of Red Hills roach habitat and avoid long-term habitat degradation.
4. During the land exchange process, assess exchange parcels to determine if there is suitable habitat. Retain appropriate habitat.
5. Incorporate existing BLM guidelines of no retardant within 300 feet of waterways. If possible, near known spawning locations and the tributaries utilized by the fish to get there, avoid retardant drops within 500 feet of the waterway. Protection of human life and property will take precedence over habitat protection during a wild fire.
6. Minimize the loss of roach spawning habitats and avoid long-term habitat degradation, including migration habitat.

Wetland & Riparian Bird Conservation Strategies

Objectives

Sustain and manage viable populations of 9 riparian and wetland bird species in the planning area: yellow-billed cuckoo, willow flycatcher, Bell's vireo, greater sandhill crane, bank swallow, tri-colored blackbird, white-faced ibis, Aleutian Canada goose, and California black rail. Where some of these species historically but no longer occur, create habitat conditions that could possibly support the species again, especially at areas such as the Cosumnes River Preserve.

Prioritized Goals

1. Identify major areas of suitable habitat for all listed and special status species located on private lands, adjacent to the Cosumnes River Preserve, as potential acquisition parcels. Acquisition will only be conducted on a willing seller basis.
2. Preserve, enhance, and restore habitat when and where appropriate. Restoration and protection sites should be prioritized by (a) ability to restore the natural hydrology of the area; (b) location of sites within potential dispersal range of existing source populations for declining species; (c) the ability to

protect and manage adjacent upland habitats for foraging, flood refugia, and/or nesting habitat; and (d) the extent to which land use within 7-12 km from the riparian corridor can be influenced or is likely to remain under management that encourages or maintains a high productivity of birds. Prioritize habitat protection/restoration sites according to the matrix of surrounding land use in the watershed. To the extent possible, restore width of the riparian corridor to its historical width. Design and implement restoration projects that are consistent with the Point Reyes Bird Observatory Partners-In-Flight Conservation Strategies for Riparian Birds.

3. Use conservation easements, as appropriate, to protect sensitive bird nesting territories and potential habitat areas located on private lands adjacent to BLM land.
4. Protect, enhance or recreate natural riparian processes, particularly hydrology and associated high-water events, to promote the natural cycle of channel movement, sediment deposition, and scouring that create a diverse mosaic of riparian vegetation types. Continue using natural process restoration to promote regeneration of riparian habitat. Examples include levee setbacks and levee breaches.
5. Encourage and/or support research on population viability to include modeling of patch size, configuration, and connectivity of restored riparian habitats to support populations of riparian-dependent birds. Utilize adaptive management to ensure that patch sizes do not fall below the minimum necessary to support populations based on (a) territory size requirements; (b) community dynamics; and (c) sensitivity of some species to fragmentation and edge effects.
6. With regards to grazing management: (a) monitor grazing impacts to important riparian and wetland areas for special status bird species; (b) manage grazing intensity or location to ensure riparian deciduous shrubs are not high-lined and that recruitment of young riparian shrubs occurs; (c) protect areas where grazing may be drying meadows by soil compaction and gully; (d) implement grazing standards that, if met, will maintain proper hydrologic function; (e) manage livestock so that aggregations of livestock do not occur near SWWF, LBVI or other special status low nesting riparian bird nest sites; (f) allow no new construction of facilities such as corrals, troughs, and salt licks, which concentrate livestock, within 3-6 miles of areas managed for southwestern willow flycatcher and least Bell's vireo; and (g) in areas with year-round grazing in riparian zones, establish relatively wide riparian pastures (at least 200 meters wide in the Central Valley and foothill riparian habitats) that allow for precise management of the intensity and timing of livestock grazing.
7. Continue to promote bird-friendly agricultural practices at the CRP such as optimum timing of rice harvest, optimum timing of flooding of the rice fields, organic farming, leaving fields fallow with rice stubble, and producing feed fields (These are fields where a crop is produced then knocked down but left unharvested for the birds to eat).
8. Continue beneficial water management for the greater sandhill crane and other wetland birds.
9. Encourage underground placement of power lines in wetland areas to protect greater sandhill crane.
10. Manage riparian and adjacent habitats to maintain a diverse and vigorous understory and herbaceous layer, particularly during the breeding season.
11. Adhere to Impact Assessment below (page 3) and Avoidance of Adverse Impacts Guidance (page 4) when planning activities in suitable habitat for the species.
12. Prioritize sites for bird inventories and monitoring and survey for occurrences of special status riparian/wetland birds in the Folsom Field Office by evaluating existing data or conducting on-site surveys. Bird inventories should be conducted in wetland and riparian habitats. These habitats would be prioritized in the following order: cottonwood-willow gallery riparian forests, large willow complexes, wetland areas, mixed forest/riparian habitat, and narrow riparian corridors.
13. Determine location and distribution of important riparian/wetland habitat components, including nesting sites, potential foraging areas, and natural and artificial water sources. Compile data on bird foraging and nesting sites in field office boundaries. Treat bird nest and territory location information as confidential.

14. Work cooperatively with agricultural research units at critical locations in the field area to promote "bird friendly" agricultural practices. Issues to consider include the following: (a) techniques for minimizing or eliminating cowbird foraging habitat (e.g., cover crops); (b) effects of pesticides, alternatives to pesticides, or changes in use of pesticides; (c) row crop versus permanent crops as buffers; and (d) creating habitat in a farming system through the use of hedgerows, tailwater ponds, hill ponds, irrigation canal and levee revegetation, and roadside buffer strips.
15. Manage or create "soft" edges (through establishment of hedgerows at field margins) appropriate to historical vegetation patterns.
16. Consider neighboring land use impacts on sensitive nesting sites and integrate protective measures as appropriate or necessary. Encourage neighbors to use a groundcover in orchards and vineyards to discourage foraging by brown-headed cowbirds and increase productivity. Use of a native species groundcover is preferable, but only if this vegetation will be managed either (a) to avoid mowing through the nesting season or (b) to be mown to 6 inches to discourage use by nesting birds.
17. At the Cosumnes River Preserve, maintain water levels to minimize nest predation by mammals on tri-colored blackbird.
18. Consider access control, such as road closures and trail re-routing, which may be needed to protect occupied and suitable habitat areas from disturbance. The Sierra Nevada Forest Plan Amendment discusses access restrictions or low-impact recreational activities in or adjacent to yellow-billed cuckoo territory (USDA 2001).
19. Provide education programs where/when needed by signing, handing out of published material and presentations.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for survival and recovery of the species'. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species' will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Minimize, to the extent feasible, and mitigate for the loss of riparian/wetland habitats, and avoid long-term habitat/water quality degradation.
2. Avoid application and drift of chemical retardants and ignition substances near known nest sites and water bodies (rivers, ponds and still water) during wild fire control and prescribed burning.
3. Water sources such as canals and ponds should be tested for water quality and contamination. If water is at a toxic level, ponds may need to be covered.
4. Avoid removal of trees, shrubs and herbaceous vegetation, with appropriate nesting characteristics, unless appropriate mitigation is developed.
5. Withdraw lands containing important riparian habitat and known nesting sites of listed bird species from the general land laws (mining claims, disposal, exchange etc.).
6. The use of pesticides in the Folsom Field Office area is extremely limited. Before using pesticides, consideration should be made of the agents' potential impacts to nesting and foraging birds. Use of alternative pest control methods including insectivorous wildlife (birds, birds, reptiles and amphibians), green manures, crop covers, alternative crop types and rotations, should be considered. The labeled/prescribed use, amount and schedule of pesticide/herbicide application should be closely adhered and monitored.
7. Avoid removal of riparian vegetation and/or altering important nesting and foraging habitat characteristics. Avoid upland activities (timber harvest/thinning) that will affect the riparian corridor

and channel conditions. The Folsom Field Office does not have much of a timber program and protection of riparian habitat would be a priority in any planning project.

8. Plan and schedule short-term and long-term land management activities to avoid important nesting areas during the breeding period.
9. Use groundcover crops in orchards and vineyards to minimize cowbird foraging habitat. Mowing of groundcover should be limited during the breeding season.
10. Forest and fuel break clearing activities will consider seasonal restrictions and protecting habitat components prior to and during the nesting season. Removing/burning groundcover in riparian habitats should be conducted after the end of breeding season. If burning activities are planned to occur during the breeding season, management should be prepared to develop methods (mowing) to keep herb layer from growing thick and tall enough to attract nesting birds prior to the nesting season and planned burn activities. Partners In Flight recommend keeping vegetation at 6 inches or lower to prevent SWWF from starting to nest.
11. If listed or other special status species are located within a close proximity of current or planned mining activities seasonal restrictions may need to be incorporated in project practices (air quality, water quality, noise and light pollution). Even single mining/dredging projects within the river channel, located near occupied sites for the SWWF, YBCU, or LBVI should be restricted during the breeding season.
12. Road and/or bridge construction/repair within known territories should be avoided during the breeding/nesting season.

**Riparian Woodrat (*Neotoma fuscipes riparia*) and
Riparian Brush Rabbit (*Sylvilagus bachmani riparius*)
Conservation Strategy**

Objective

To sustain and manage the riparian forest ecosystem to such an extent as to support a viable population of the riparian woodrat (woodrat) and riparian brush rabbit (brush rabbit) at the Cosumnes River Preserve (preserve), through introduction or reintroduction and through conservation and management of riparian forest habitat in the lower Cosumnes River watershed (lower watershed), south and west of Sloughhouse.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority cannot be met in the short term, other lesser priorities will be completed.

1. Update the Cosumnes River Preserve Management Plan to reflect management and ecosystem needs of the woodrat and brush rabbit by appending this strategy to the plan.
2. Address the following factors in all planning documents that address Valley Riparian habitat management: (a) minimize the loss of potential woodrat and brush rabbit habitat and avoid long-term degradation; (b) plan and schedule short-term and long-term land management activities to enhance potential woodrat and brush rabbit habitat; and (c) identify and remove any non-native predators that threaten survivorship of the species. This applies to all planning documents that are currently in preparation and to existing documents that will be updated, or will have this strategy appended to them.
3. Establish a program to remove feral cat and black rat populations from the preserve, and identify other non-native predators that could impact native mammal populations.

4. Develop an emergency fire response plan for the "giant forest" at the preserve, to protect riparian habitat from catastrophic fire³.
5. Conduct or allow extensive surveys to identify the status of the woodrat and brush rabbit on the preserve⁴.
6. Create flood refugia adjacent to suitable woodrat and brush rabbit habitat in the lower watershed at a minimum of three locations, and allow vegetation—including oak, willow, wild rose, ceanothus, and California blackberry—to overgrow the refugia.
7. Eradicate non-native blackberry in the giant forest.
8. Within the lower watershed, continue to acquire habitat and restorable habitat in a manner consistent with the existing riparian restoration goals of the preserve.
9. Continue to restore and enhance riparian habitat in a manner consistent with the existing riparian restoration goals of the preserve.
10. Continue to facilitate and partner in riparian woodrat and brush rabbit research, with emphasis on: (a) surveys to determine range of the species, (b) determination of which subspecies was most likely to have occurred along the Cosumnes River (c) genetics, (d) population dynamics, (e) response to vegetation and fuels management, (f) mortality factors, and (g) viability analysis.
11. Determine the role these species played in the ecosystem and determine whether the appropriate species to fill the role are the listed entities or closely related subspecies that are not listed.
12. Partner in reestablishment plans for these species that may include the above research or additional research to support the biological needs involved in a reestablishment effort.
13. Develop maintenance guidelines, in partnership with FWS, to reduce adverse effects of routine maintenance on woodrat and brush rabbit habitat.
14. Collaborate with FWS in establishing management directions for the species.
15. Examine funding and partnerships.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Conserve the maximum amount of woodrat and brush rabbit habitat when planning actions in habitat in the lower watershed. Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided woodrat and brush rabbit habitat within or adjacent to the project area as Environmentally Sensitive Areas. These areas should be avoided by all construction personnel.
2. Avoid construction activities in, or within 1000 feet of, woodrat and brush rabbit habitat, unless consultation with the FWS has been completed on the action. Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
3. Construction personnel should receive FWS-approved worker environmental awareness training prior to working in woodrat and brush rabbit habitat. This training instructs workers to recognize these mammals and their habitat and is intended to protect the workers from accidentally harming or killing the species.

³ This can be modeled after the FWS-approved plan for Caswell State Park.

⁴ Survey results will be used to determine the correct subspecies to reestablish in the riparian ecosystem at the preserve and to protect any remaining individuals or remnant populations.

4. A survey of the project area should be conducted a minimum of 4 weeks prior to construction in, or within 1000 feet of, woodrat or brush rabbit habitat, to determine whether these species or habitat needed by the species are present.
5. Do not commence construction activities within 1000 feet from of woodrat or brush rabbit habitat consultation with the FWS has been completed on the action.
6. If either of these species are encountered during construction, cease all construction-related activities until formal consultation with the FWS has been completed. Report any sightings and any take of these species to the FWS immediately by telephone at (916) 414-6600.
7. After completion of construction activities, BLM will ensure removal of any construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as replanting forage or shelter plants and constructing temporary refugia.

**Valley Raptor Conservation Strategy for Burrowing owl,
Athene cunicularia, and Swainson's Hawk, *Buteo swainsoni***

Objective

To sustain and manage a viable population of burrowing owl at the Cosumnes River Preserve through conservation, management, and enhancement of burrowing owl nesting burrows and foraging habitat in the lower Cosumnes River watershed.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective for valley raptors and are in priority of importance. In instances where a higher priority cannot be met in the short term, other lesser priorities will be completed.

1. Continue acquisition/conservation easements of oak savannah, riparian forests, and grasslands threatened by urbanization and other destructive land uses in the Central Valley.
2. Continue the creation, enhancement, and protection of riparian woodlands for Swainson's Hawk nesting habitat. These riparian areas should be not less than 300' wide, with the successful establishment of native riparian species; such as cottonwoods, oaks, sycamores, and willows.
3. Determine and map burrowing owl nesting burrows and active Swainson's Hawk nests at Cosumnes River Preserve.
4. Where burrowing owls occur, maintain a mosaic of grassland habitat (tall grass for foraging and short grass for nesting and roosting).
5. Develop prescribed fire/grazing management in grassland areas where burrowing owls occur to maintain/create suitable habitat by reducing vegetation around existing/potential nest sites. Mowing may substitute in areas where prescribed burning and grazing can not be used, and where it is deemed necessary to maintain habitat.
6. Include avoidance measure #3 in conservation easements and specify the use of insecticides with the lowest toxicity to nontarget species.
7. In conservation easements on rangeland, specify that no rodent control will be allowed.
8. Adhere to Impact Assessment below (page 2) and Avoidance of Adverse Impacts Guidance (page 3) when planning activities within suitable habitat for the species.
9. Install and evaluate the use of artificial burrows at Cosumnes River Preserve when nearby activity on private land has destroyed a significant number of burrowing owl nest burrows.
10. Encourage the reduction or restriction of the use of pesticides. Encourage neighboring landowners to use insecticides with the lowest toxicity to nontarget species.

11. Discourage rodent control on neighboring lands. Suggest restricting the timing of control activities to avoid the period when burrowing owls choose nest sites and are nesting. Suggest that traps, poisoned meats, or poisoned grains not be used. Instead, burrows unoccupied by burrowing owls or other special status species should be fumigated.
12. Encourage/educate neighboring farmers about planting crops which are compatible with the foraging needs of Swainson's Hawks. Also encourage the preservation of isolated trees in the midst of cultivated land.
13. Support research related to breeding success, contaminants, dispersal, movement, mortality, habitat use, and other topics.
14. Develop an educational program for private landowners and the general public about the benefits of protecting habitat for both species and for burrowing mammals, and the negative effects of insecticides and rodenticides.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future.

1. Integrate protective measures into projects as appropriate or necessary, based on type, extent, and duration of land management activities proposed to occur.
2. Conserve the maximum amount of valley raptor habitat when planning actions in habitat. Minimize, to the extent feasible, loss of valley raptor habitats and avoid long-term habitat degradation.
3. Pesticides will not be sprayed within 400-600 meters of burrowing owl nest burrows during the breeding season.
4. Seasonally restrict all management activities that could potentially impact nesting raptors between March 1 and August 15 within ½ mile of active nest sites.
5. Identify avoidance areas based on survey results.
6. After completion of any construction activities, ensure removal of any construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as retiring and reconfiguring roads and replanting with native seed mix.
7. Near nesting burrows/sites, take actions to minimize smoke and fire impacts during fire suppression activities where feasible or practical.
8. Burrowing owl nesting burrows occupied within the past 3 years will not be destroyed.
9. Design projects to minimize mortality to valley raptors.
10. Avoid direct or indirect impacts to Swainson's Hawk nesting trees.

Valley Elderberry Longhorn Beetle Conservation Strategy

Objectives

- To sustain existing VELB populations on BLM land throughout the Folsom Field Office.
- To sustain and manage viable habitat for Valley elderberry longhorn beetle (VELB) through conservation and management of its host plant, elderberry bushes, throughout the Folsom Field Office.

Prioritized Goals

1. Map valley elderberry on BLM Folsom land and identify the most important VELB populations.
2. Retain in federal ownership known VELB population sites.
3. Develop an appended programmatic consultation for elderberry plants in remote or isolated locale (this gets conservation plantings planted in advance of impacts and streamlined consultation for individual projects). *Note: the appended programmatic will deal with ROWs, on-going conservation/restoration efforts, fuels treatments, mining, facility maintenance, grazing, and agriculture.*
4. Continue the creation or enhancement of riparian woodlands. Emphasize native plantings including elderberry bushes where appropriate.
5. Continue acquisition/conservation easements of oak savannah and riparian forests threatened by urbanization and other destructive land uses in the Central Valley.
6. Adhere to the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (FWS publication).
7. Adhere to the impact assessment (page 2) and avoidance of adverse impacts (page 3).
8. Support VELB research that is pertinent to its ecological requirements and management needs.
9. Research (literature search) best management practices to control exotic ant species as related to VELB, with an emphasis on Argentine and Fire ants.
10. In conservation easements for VELB specify avoidance measures related to buffer zones, chemicals, and mowing. In conservation easements for other species where VELB is present, negotiate or consider these avoidance measures. See avoidance measures below.
11. Remove exotic plants such as Chinese tree-of-heaven in areas where elderberry is being displaced by exotic species. *Note: It may not be possible to remove Chinese tree-of-heaven, fig, or other introduced species if they are part of a significant cultural resource site.*
12. Develop an educational program for private landowners and the general public in order to minimize damage to the VELB's host, *Sambucus*.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future. Adhere to the guidelines below unless addressed separately in the Appended Programmatic or through informal consultation.

1. Integrate protective measures into projects as appropriate or necessary, based on type, extent, and duration of land management activities proposed to occur.
2. Conserve the maximum amount of VELB habitat when planning actions in habitat. Minimize, to the extent feasible, loss of VELB habitats and avoid long-term habitat degradation.
3. Completely avoid disturbances within a 100-foot buffer around elderberry plants containing stems measuring 1.0 inch or greater in diameter at ground level.
4. Fence and flag all areas to be avoided during construction. In areas where encroachment on the 100-foot buffer has been approved by USFWS, provide a minimum setback of at least 20 feet from the dripline of each elderberry plant.
5. Brief contractors/work crews on the need to avoid damaging the elderberry plants and the possible penalties for not complying with these requirements.
6. No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant should be used in the buffer areas, or within 100 feet of any elderberry plant with one or more stems measuring 1.0 inch or greater in diameter at ground level.

7. Mowing of grasses/ground cover may occur from July through April to reduce fire hazard. No mowing should occur within five (5) feet of elderberry plant stems. Mowing must be done in a manner that avoids damaging plants (e.g., stripping away bark through careless use of mowing/trimming equipment).
8. Elderberry plants must be transplanted if they can not be avoided by the proposed project. All elderberry plants with one or more stems measuring 1.0 inch or greater in diameter at ground level must be transplanted to a conservation area. Each elderberry stem measuring 1.0 inch or greater in diameter at ground level that is adversely affected must be replaced, in the conservation area, with elderberry seedlings or cuttings at a ratio from 1:1 to 8:1. Minimization ratios are listed and explained in Table 1. A mix of native plants associated with the elderberry plants at the project site or similar sites will also be planted in the conservation area at ratios ranging from 1:1 to 2:1 [native tree/plant species to each elderberry seedling or cutting (see Table 1)].
9. After completion of any construction activities, ensure removal of any construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include such activities as retiring and reconfiguring roads and replanting with native plantings.

Table B-1 Minimization ratios are based on location (riparian vs. non-riparian), stem diameter of affected elderberry plants at ground level, and presence or absence of exit holes

Location	Stems (maximum diameter at ground level)	Exit holes on shrub Y/N (quantity) ¹	Elderberry Seeding Ratio ²	Associated Native Plant Ratio ³
non-riparian	stems $\geq 1"$ & $\leq 3"$	No: Yes:	1:1 2:1	1:1 2:1
non-riparian	stems $> 3"$ & $< 5"$	No: Yes:	2:1 4:1	1:1 2:1
non-riparian	stems $> 5"$	No: Yes:	3:1 6:1	1:1 2:1
riparian	stems $\geq 1"$ & $\leq 3"$	No: Yes:	2:1 4:1	1:1 2:1
riparian	stems $> 3"$ & $< 5"$	No: Yes:	3:1 6:1	1:1 2:1
riparian	stems $> 5"$	No: Yes:	4:1 8:1	1:1 2:1

¹ All stems measuring one inch or greater in diameter at ground level on a single shrub are considered occupied when exit holes are present anywhere on the shrub.

² Ratios in the *Elderberry Seeding Ratio* column correspond to the number of cuttings or seedlings to be planted per elderberry stem (one inch or greater in diameter at ground level) affected by a project.

³ Ratios in the *Associated Native Plant Ratio* column correspond to the number of associated native species to be planted per elderberry (seedling or cutting) planted.

**Valley Grassland and Vernal Pool Conservation Strategy for
California tiger salamander (*Ambystoma californiense*), western spadefoot toad (*Scaphiopus hammondi*),
Vernal pool fairy shrimp (*Branchinecta lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardii*)**

Objective

To sustain and manage the valley grassland and vernal pool ecosystems within the Folsom Field Office area to support viable populations of the California tiger salamander, western spadefoot toad, vernal pool fairy shrimp and vernal pool tadpole shrimp through management of ecosystem processes and associated species, and through conservation and management of upland, subterranean, and wetland habitats on BLM lands up to 1900 feet in elevation, with greatest conservation emphasis in Tuolumne and Sacramento counties.

Prioritized Goals

The following goals are all considered necessary to meet the conservation objective and are in priority of importance. In instances where a higher priority cannot be met in the short term, other lesser priorities will be completed.

1. Identify all known and potential vernal pool and associated upland habitat (note: this includes the extent of the hardpan up to a minimum of 100 meters, gravel and clay hills within one mile for western spadefoot toads, ground squirrel burrows within one mile for California tiger salamander, and undisturbed soil profile within 100 meters for ground-nesting bees) on BLM land in the planning area by overlaying the Holland vernal pool layers for known and potential vernal pool habitat with BLM land ownership layer.
2. Maintain a GIS database that includes location information for special status vernal pool species on BLM land.
3. Inventory vernal pool plants, California tiger salamander, western spadefoot toad, and vernal pool crustaceans within the Folsom Field Office Area.
4. Hold vernal pool special status plant, California tiger salamander, western spadefoot toad, and vernal pool crustacean habitat areas in BLM authority (with the exception of the Sunrise Douglas and Shotgun Creek parcels), with priority on holding lands in Sacramento and Tuolumne counties.
5. Identify sites where deleterious non-native species are posing a threat to special status species. Control/eliminate deleterious non-native species (plants, vertebrates) using methods that are determined to be the most effective.
6. Adopt a sterilization protocol for equipment used in vernal pools.
7. Within known California tiger salamander populations, create, enhance, and protect existing habitat: create ponds within existing grazing allotments and other suitable areas; enhance existing ponds if necessary by re-engineering to allow draining; and scoop out existing ponds that have filled in.
8. In conservation easements on rangeland, specify that no rodent control will be allowed.
9. Protect the Tuolumne County Table Mountain vernal pools through monitoring and range management.
10. Utilize grazing strategies that are most compatible with vernal pool plants, western spadefoot toad, California tiger salamander, and vernal pool crustaceans breeding and survival, and habitat suitability based on the best available information. Take an adaptive management approach to respond to changing habitat conditions.
11. Develop and implement grazing guidelines or enhance existing guidelines for public lands which have been identified as having vernal pool habitat quality concerns due to livestock grazing or lack of livestock grazing. Include pesticide restrictions on dips, wipes, feed additives, and burrow fumigants on BLM lands.

12. Identify vernal pool habitat for special status species for withdrawal from mineral entry. Similarly protect connectivity areas between US Fish and Wildlife Service specified core areas or critical habitat for amphibians.
13. Identify areas where mining would pose a threat to upland habitat for western spadefoot toads and do not allow mineral sales in these areas. If there are locatable minerals involved, seek withdrawal from mineral entry.
14. Vernal pool special status plant, California tiger salamander, western spadefoot toad, and vernal pool crustacean habitat located on private land will be considered a priority when addressing acquisition of parcels. Potential CTS habitat corridors that may link the isolated populations will also be identified as a priority for acquisition. Vernal pool complexes containing western spadefoot toads will be given highest priority for acquisition. Purchase conservation easements or parcels from willing sellers where acquisitions may protect these populations.
15. Adhere to Impact Assessment below (page 3) and Avoidance of Adverse Impacts Guidance (page 4) when planning activities within suitable habitat for the species.
16. In valley grassland systems, manage habitat to support California ground squirrels. This will include grazing or burning at a level that does not preclude ground squirrels and does not negatively impact special status species in the long term.
17. Dispose of the Sunrise Douglas parcel in Sacramento County and acquire special habitat which will include vernal pool habitat within the FWS service area for vernal pool conservation.
18. Examine funding and partnerships: Partnerships with private parties, local, state, and federal agencies, and conservation organizations. Examples include lessees, California Cattlemen's Association, The Nature Conservancy, Trust for Public Lands, FWS Partners Program or Endangered Species Recovery Program, Safe Harbors, Natural Resources Conservation Service, American River Conservancy, local open space districts and county trust lands, and California Department of Fish and Game, California Rangelands Trust, Packard Foundation.

Avoidance of Adverse Impacts

An essential component of conservation is avoiding impacts to individuals and habitats that are needed for the survival and recovery of the species. By protecting the ecosystems and fragments of habitat remaining, and by protecting the maximum number of individuals in the population, the species will have more individuals capable of contributing to the genetic diversity within the species when restored habitat becomes available in the future. BLM will integrate protective measures into projects as appropriate or necessary, based on type, extent, and duration of land management activities proposed to occur.

Upland avoidance measures

Ground disturbing activities near ground squirrels (*Spermophilus beecheyi*) colonies should be avoided to allow for sustained breeding and persistence of ground squirrels. Clearing of woody vegetation from areas adjacent to ground squirrel colonies should be done by hand if within 200 feet of burrows, and conducted outside of the breeding season of February through June, but may commence after juveniles are detected above ground in numbers at or above the adult population numbers.

Subterranean avoidance measures

- Identify all upland gravels and hills within 1.25 miles of vernal pools that could support burrowing western spadefoot toads. Exclude such areas from mining and gravel extraction.

- Identify subterranean habitat for which mining would threaten habitat suitability for western spadefoot toads and develop and implement best management practices to prevent or minimize adverse impacts to western spadefoot toads from mining operations.

Wetland avoidance measures

1. Do not fill or grade any vernal pools or swales shown to support the California tiger salamander, western spadefoot toad, or vernal pool crustaceans and protect and conserve vernal pools and swales and vernal pool species.
2. Plan and schedule short-term and long-term land management activities to avoid California tiger salamander (November-March) and western spadefoot toad (December-January) breeding seasons within 1000 feet of where suitable breeding habitat exists.
3. Refer to the watershed management and protection plan in the affected area to identify additional protective measures.
4. Follow sterilization protocol in goal #3 identified above.
5. Incorporate existing BLM guidelines of no retardant within 500 feet of vernal pool complexes. Minimize the loss of vernal pools and vernal pool complexes and avoid long-term habitat degradation, including upland and subterranean habitat.

**Conservation Strategy for Federally Listed Plant
Species Managed by BLM**

BLM's Folsom Field Office manages 8 plant species listed under the federal Endangered Species Act of 1973. These species can be clustered into three groups based on the ecosystems in which they occur. (One species occurs in two of the groups.) The Pine Hill species are associated with gabbro and similar rock types and are found primarily in western El Dorado County. Some of these species also occur in western Nevada County and Yuba County. The five listed species in this group are *Calystegia stebbinsii*, Stebbins' morning glory; *Ceanothus roderickii*, Pine Hill ceanothus; *Fremontodendron decumbens*, Pine Hill flannelbush; *Galium californicum sierrae*, El Dorado bedstraw; and *Senecio layneae*, Layne's butterweed. There are two federally listed species associated with the Lone Formation primarily in Amador County. These species are *Arctostaphylos myrtifolia*, lone Manzanita; and *Eriogonum apricum apricum*, Apricum Hill buckwheat. Two federally listed species managed by BLM are associated with the dunite and serpentinite of the Red Hills. These species are *Verbena californica*, California verbena; and *Senecio layneae*, Layne's butterweed (already mentioned above as part of the Pine Hill group). This conservation strategy is organized by these ecosystem/geographic groupings of species, because the species of a single group often co-occur, and management actions often affect more than one species.

Introduction—Special Status lone Formation Plant Species Managed by BLM

The two federally listed species that occur on public land in this area are *Arctostaphylos myrtifolia*, lone manzanita; and *Eriogonum apricum* (*Eriogonum apricum* var. *apricum*, Apricum Hill buckwheat). The sensitive species *Horkelia parryi* also occurs in this area.

The public land involved consists of five parcels (two pairs of these parcels are joined at a corner, so these five parcels could be considered three locations) that support one or the other of the two federally listed plant species of the lone Formation. The lone manzanita Area of Critical Environmental Concern and adjacent public land (proposed for addition to the ACEC) is one of these locations. Another pair of joined parcels will be referred to as the Carbondale *Arctostaphylos myrtifolia* site. The other parcel will be referred to as the *Eriogonum apricum apricum* site.

Two issues stand out as the most critical for the conservation of the two listed lone Formation plant species:

- Little of the habitat of either species is being held in permanent conservation status. For one variety of *Eriogonum apricum*, (*E. apricum prostratum*), there is no protected habitat.
- A fungal disease, *Phytophthora cinnamomi*, is killing whole stands of *Arctostaphylos myrtifolia*. The disease has reached one BLM parcel with *Arctostaphylos myrtifolia*.

Prioritized Goals

1. Institute quarantine measures for *A. myrtifolia* to prevent the spread of *Phytophthora cinnamomi*:
 - a. Fencing both the ACEC and the non-ACEC lone manzanita parcels. (Initiated summer 2006.)
 - b. Closures published for both parcels. (Accomplished 2005.)
 - c. Explanatory signs for both parcels.
 - d. Resolve lake trespass at lone manzanita ACEC, so it does not create additional potential for disease transmission.
 - e. Do educational outreach about *Phytophthora cinnamomi* to neighbors to BLM properties with lone manzanita.
2. lone manzanita ACEC
 - a. Consider adding 60 acres of public land adjacent to the lone manzanita ACEC to the ACEC. (Proposed in this RMP.)
 - b. Consider adding both the Carbondale *A. myrtifolia* parcel and the *E. apricum apricum* parcel to the ACEC. (Proposed in this RMP.)
3. Collect data for monitoring the movement of *Phytophthora cinnamomi* both on, and in the vicinity of, BLM lands. Private landowners may limit access preventing monitoring of private lands.
4. Acquire habitat for both lone Manzanita and Apricum Hill/Irish Hill buckwheat. In such situations, often areas of preferred prime habitat are not available because the owners are not willing sellers. A successful acquisition program must be flexible and respond to opportunities that arise. However if there are choices available, the priority for acquisition should be:
 - a. Habitat supporting both *Eriogonum apricum prostratum* and *Arctostaphylos myrtifolia*.
 - b. Habitat supporting only *E. apricum prostratum*.
 - c. Habitat supporting both *E. apricum apricum* and *A. myrtifolia*.
 - d. Habitat supporting only *E. apricum apricum*.
 - e. Habitat supporting only *A. myrtifolia*.
5. Collect GPS data for populations that have been mapped by sketching, either on topo quads or aerial photos, heretofore.
6. Work with CDF to extend the modified suppression plan for the lone manzanita ACEC to the other BLM parcels with lone Formation listed plant species. Modify the suppression plan to include measures to prevent the transmission of *Phytophthora cinnamomi*. (CDF's experience with sudden oak death, *Phytophthora ramorum*, may be helpful in this regard.)
7. Continue to prevent mining impacts to the habitat of listed species by seeking mineral withdrawals. Segregations from mineral entry may be used as a stop-gap measure until withdrawals occur.
8. Protective measures for the *E. apricum apricum* property.
 - a. Fence the parcel
 - b. Signs for the parcel
9. Continue restoration efforts for lone manzanita at the lone manzanita ACEC and the non-ACEC *A. myrtifolia* parcel, if possible. Restoration efforts may be greatly constrained by the need to stop the spread of *Phytophthora cinnamomi*. (For instance *Phytophthora cinnamomi* is thought to have been spread largely through the movement of infected nursery stock. So nursery propagation of lone

manzanita followed by field planting poses risks of further transmission of the disease to the wild.) Work with species experts and regulatory agencies to see if restoration can proceed, and to create a restoration plan if restoration is feasible.

10. Participate in the Recovery Implementation Team (called for in a preliminary draft of the upcoming US Fish and Wildlife Service recovery plan for the lone species) if so requested.
11. Include BLM land in an interagency preserve system if the various agencies involved with lone Formation biological conservation efforts choose to create such a system.
12. Examine the potential for increasing *E. apricum apricum* on the *E. apricum apricum* parcel.
13. Seek grants and look for partnerships for funding for acquisitions and management actions.
14. Engage in public education and outreach to explain quarantine actions on federal land, to explain the importance of private land populations, and to get the help of the public to reduce the spread of *Phytophthora cinnamomi*. Also public education can foster a political climate where local agencies are more inclined to participate in recovery efforts.

Avoidance of Adverse Impacts

General

1. When ground-disturbing activities are planned for special status species habitat, spatial avoidance of the entire habitat should be given the highest priority. Other avoidance strategies risk some level of impact.
2. Spatial avoidance of areas with observed special status plants with no avoidance of adjacent potential habitat can avoid most plant injury. However seeds or some dormant underground structures may still be affected because propagules may occur beyond the boundaries of existing plant populations. Effects to habitat and key habitat elements like soils or pollinators may still occur.
3. Temporal avoidance of habitat can only prevent above-ground plant injury for annuals and perennials that die back seasonally. Direct effects (like crushing) to shallow underground structures and seeds may still occur. Soil compaction or movement may affect seeds or underground structures as well. Effects to habitat and key habitat elements like soils or pollinators may still occur.

Grazing

No grazing leases are authorized where these listed lone Formation plant species occur. No grazing leases will be issued in the habitat of these listed species.

Minerals

ACEC status is proposed for all lone Formation listed species habitat. The filing of a plan of operations is required for any mechanized mining operation within an ACEC. A plan of operations is also required in situations where a listed species will be affected by a proposed mining operation. However ACEC status of an entire parcel can create an additional buffer around a species occurrence. BLM has the authority to approve or disapprove mining plans of operation, therefore BLM can modify projects to reduce or eliminate environmental impacts.

Recreation

Parcels that support lone Manzanita have been closed to public entry to avoid the spread of *Phytophthora cinnamomi*. There is no public access and no recreational pressure on the single BLM parcel that supports Apricum Hill buckwheat.

Timber

There are no timber resources in this area.

Lands

Lands with lone Formation listed species will not be transferred out of public ownership.

Wildfire

A modified suppression plan has been written for the lone Manzanita ACEC. Key elements include avoidance of the use of heavy equipment and avoidance of the use of fire retardant chemicals with fertilizer. This plan will be extended to additional lands proposed for addition to the ACEC, with the addition of these parcels to the ACEC.

Fuels Treatments for Public Safety

Because BLM parcels that support lone Formation listed species are not close to developed areas, the need for fuels projects is not anticipated. Should development reach this area in the future, and if fuels projects become necessary, the following approach will be adopted:

Fuels treatments in special status species habitat should be designed to have the minimum impact on the special status species. Modifications of fuels projects that may reduce impacts include:

1. Avoidance of the species habitat,
2. Avoidance of the species, (e.g., creating buffers around individual shrubs or clusters of shrubs),
3. Temporal avoidance including brush clearing (without soil disturbance) during periods when an herbaceous perennial sensitive species has died to its base, or when an annual species has completed its life cycle,
4. Hand clearing instead of the use of heavy equipment,
5. Mastication instead of blading (if heavy equipment is used),
6. Fall burning instead of mechanical clearing.

Methods chosen for specific projects will reflect the practicalities of fuel break construction or fuels reduction in a specific vegetation type, as well as the ecological requirements and vulnerabilities of the sensitive species involved. Methods for clearing brush like blading or chaining with a tractor that cause extensive soil disturbance will not be used in special status species habitat unless it has been demonstrated by monitoring studies that such clearing methods constitute conservation measures for that species.

Introduction—Special Status Red Hills Serpentine Plant Species Managed by BLM's Folsom Field Office

This strategy addresses two listed and four sensitive species of the public lands in the Red Hills and associated serpentine areas in Tuolumne County.

Special status species involved include:

<i>Verbena californica</i>	Federally listed threatened
<i>Senecio layneae</i>	Federally listed threatened
<i>Allium tuolumnense</i>	BLM sensitive
<i>Chlorogalum grandiflorum</i>	BLM sensitive
<i>Lomatium congdonii</i>	BLM sensitive
<i>Senecio clevelandii</i> var. <i>heterophyllus</i>	BLM sensitive

Geographic areas include:

- Red Hills ACEC
- Lands acquired with the intention that they be added to the Red Hills ACEC
- The portion of the Red Hills serpentine body east of Don Pedro Reservoir
- Rawhide Hill
- Woods Creek
- The mouth of Kanaka Creek, where it enters into Don Pedro Reservoir
- New Priest Grade serpentine

Prioritized Goals

1. Weeds
 - a. Continue to control yellow starthistle (YST) with mechanical means as long as that approach yields positive results.
 - b. Control Italian thistle by mechanical means.
 - c. Control roadside yellow starthistle along Red Hills Road either with the use of a Waipuna hot water/foam system, or encourage herbicide spraying by County. Herbicide spraying should only be used if the Waipuna is either unavailable or ineffective, and the spraying can be accomplished with sufficient safeguards to prevent impacts to special status plant species, surface water and aquatic animals. With either method of control, monitoring and adaptive management should follow initial treatments.
 - d. Inventory for barbed goatgrass and medusahead. Monitor the impacts to sensitive species when barbed goatgrass and medusahead invade special status species habitat. If negative impacts are demonstrated, control barbed goatgrass and/or medusahead where it is impacting special status species, or more generally if possible.
2. Red Hills ACEC
 - a. Add newly acquired lands in the Red Hills to the ACEC. (Proposed in this RMP.)
 - b. Add adjacent lands to the ACEC that possess similar resource values, especially listed and sensitive species. Lands east of Don Pedro Reservoir directly east of the Red Hills ACEC and forty acres that straddle Hwy 108/120 deserve inclusion. (Proposed in this RMP.)
 - c. Evaluate other Tuolumne County serpentine habitats like Rawhide Hill that support a similar suite of sensitive species, for inclusion in the Red Hills ACEC, or for the creation of separate ACEC's.
3. Acquire habitat for listed species. Priority for habitat acquisition should be:
 - a. *Brodiaea pallida*
 - b. *Verbena californica*
 - c. *Senecio layneae*

4. Continue grazing monitoring to assess the impacts of grazing on the two listed species of the Red Hills, *Verbena californica* and *Senecio layneae*. (The frequency of monitoring need not necessarily remain annual.) Follow up on consultation.
5. Revise the Red Hills ACEC management plan to include new data, new listings of species under the Endangered Species Act, newly acquired lands, other lands added to the ACEC because of newly developed resource information, and evolving recreational use.
6. Continue to block and disguise old ORV roads and new trespass ORV roads to limit impacts to special status species from vehicles.
7. Get good baseline data for monitoring plant occurrences, especially GPS data for those species that occur as distinct discrete occurrences. Some sensitive species are so widespread and dispersed in the Red Hills that it would be impractical to take GPS data for locations, (e.g., *Chlorogalum grandiflorum*).
8. The modified suppression plan for the Red Hills should be extended to include at least all of the occurrences of the listed species of the Red Hills. This might be most easily accomplished by the extension of the Red Hills boundary to include lands east of Don Pedro Reservoir directly across from the Red Hills ACEC, 40 acres straddling Hwy 108/120 on the west side of the Red Hills, and the lands acquired specifically for addition to the Red Hills ACEC. All these lands are virtually contiguous with the Red Hills ACEC. These additions would include all but one of the known listed plant species occurrence on BLM land in Tuolumne County. The remaining Layne's butterweed occurrence lies on the east side of Don Pedro Reservoir, near the mouth of Kanaka Creek where it empties into Don Pedro Reservoir. This area is separated from the present Red Hills ACEC by about 1 mile and the reservoir.
9. Trails
 - a. Create a master trails plan for the Red Hills. Establish "limits of acceptable change" thresholds, that if exceeded will trigger remedial actions, (e.g., closure of sections of the ACEC to equestrian use while trespass trails are rehabilitated).
 - b. Work with groups like the Tuolumne County Trails Council and the Backcountry Horsemen to monitor and maintain trails, to prevent trail proliferation and minimize erosion/sedimentation.
10. Participate in the implementation of the Southern Sierra Foothill Plant Recovery Plan when it is adopted. It is now in a preliminary draft form.
11. Research
 - a. Encourage research that will leads to better understanding of the ecology of the special status species of the Red Hills; with an emphasis on aspects of ecology that can readily be influenced by management practices. Knowledge of species responses to fire, grazing, mechanical disturbance, and weed invasions would all be useful. Basic knowledge of life history parameters like plant longevity, the rate of decay of the viability of seed in the seed bank, and the extent of vegetative reproduction, would also be useful in management.
 - b. Promote research to resolve the taxonomic position of *Senecio clevelandii* var. *heterophyllus*, i.e., whether the variety deserves recognition as a distinct taxon.
12. Use fences and signs to indicate public land boundaries in areas with special status species. Use signs that explain the sensitivity of the resources where providing that information has the potential to increase compliance.
13. Survey to establish the boundaries of the parcel at the mouth of Kanaka Creek that supports a population of Layne's butterweed, to determine what portion of the population is on public land, and to facilitate potential management actions, (e.g., fencing).
14. Inventory for *Cryptantha mariposae* and *Lupinus spectabilis*. Both species have been reported from the Red Hills, but voucher specimens have not been collected and there are no records in CNDDb. Although present management is probably compatible with the protection of these species,

- knowledge of the locations where the species occur would aid project planning. BLM should be aware of all the sensitive species occurrences on its land, especially in focus areas like the Red Hills ACEC.
15. Continue to prevent mining impacts to the habitat of listed species and significant concentrations of sensitive species. Seek a mineral withdrawal for the Red Hills ACEC. If not all lands in the vicinity of the Red Hills that support listed plant species are included in the ACEC, add those lands to the area nominated for mineral withdrawal. Segregations from mineral entry have a similar effect for a fixed time period.
 16. Use a program of low level aerial photography taken at regular intervals to track disturbances and large scale vegetation changes over time, in the Red Hills and associated serpentines. Flights should use the same photographic spectrum, the same scale and the photos should be taken at the same time of the year.
 17. Work with the County on their weed spray program; especially if they institute a homeowner equipment loan program. Such a program could affect special status species on private land in the Red Hills, either negatively or positively. Explore with the County whether they would be willing to spray for yellow starthistle (YST) along Red Hills Road, observing no spray zones we post in sensitive areas. This would reinforce our YST manual control efforts on public lands on either side of Red Hills Road.
 18. Educate neighbors on weed control and potential rare plant impacts.
 19. Seek grants and look for partnerships for funding for acquisitions and management actions.
 20. Engage in public education and outreach to explain the purpose of the ACEC, to solicit input on management, to involve the public in volunteer efforts, to explain the importance of private land populations of some Red Hills species, and to get the help of the public to reduce the spread of weeds in the Red Hills area.

Avoidance of Adverse Impacts

General:

1. When ground-disturbing activities are planned for special status species habitat, spatial avoidance of the entire habitat should be given the highest priority. Other avoidance strategies risk some level of impact.
2. Spatial avoidance of areas with observed special status plants with no avoidance of adjacent potential habitat can avoid most plant injury. However seeds or some dormant underground structures may still be affected because propagules may occur beyond the boundaries of existing plant populations. Effects to habitat and key habitat elements like soils or pollinators may still occur.
3. Temporal avoidance of habitat can only prevent above-ground plant injury for annuals and perennials that die back seasonally. Direct effects (like crushing) to shallow underground structures and seeds may still occur. Soil compaction or movement may affect seeds or underground structures as well. Effects to habitat and key habitat elements like soils or pollinators may still occur.

Grazing

Two current grazing leases in the Red Hills support federally listed threatened species. Two other leases that supported federally listed species have been canceled, or altered to exclude the habitat of the listed species. One of the remaining leases supports only one listed species, Layne's butterweed. The vast majority of the plants of this species are on a ridge that was virtually inaccessible to cattle due to the thick brush surrounding

the butterweed habitat and the lack of water nearby. No evidence of grazing had been observed in this area. A fire during the summer of 2006 has cleared the brush and made this area much more accessible. The Layne's butterweed population will be monitored in spring 2007 for grazing impacts. The other lease includes both Layne's butterweed and California verbena. Because the phenology of both species is relatively late, the grazing period was moved forward and now ends on April 15. Monitoring of both species was begun in 1998, using a comparison of grazed and ungrazed (fenced) plots to evaluate grazing effects. No clear pattern of grazing effects has emerged from monitoring, i.e., it is not clear for either species that the grazed or ungrazed plots are resulting in greater viability. The present grazing regime is being maintained and the populations appear stable. No new grazing leases will be authorized.

Minerals

ACEC status is proposed for all Red Hills listed species habitat not already included in the ACEC. The filing of a plan of operations is required for any mechanized mining operation within an ACEC. A plan of operations is also required in situations where a listed species will be affected by a proposed mining operation. However ACEC status of an entire parcel can create an additional buffer around a listed species occurrence and also protect associated sensitive species. BLM has the authority to approve or disapprove mining plans of operation, therefore BLM can modify projects to reduce or eliminate environmental impacts.

Recreation

Only non-motorized recreation is allowed in the Red Hills. Horseback riding is popular and limited facilities have been provided. A proposed action in the Draft RMP will confine equestrian use to designated trails. Dispersed camping is currently allowed. With the adoption of the proposed action of the Draft RMP, the Red Hills will become a day-use area. A nature trail was installed in 2005-2006 (after informal consultation). It was designed to minimize impacts to special status species, while still affording opportunities for the public to view these species and for the public to become informed about their significance. Other areas with listed Red Hills species, for instance east of Don Pedro Reservoir, have virtually no public access. (The public could access this area, but the access would be by boat, followed by a considerable hike cross-country.)

Timber

There are no timber resources in this area.

Land

Lands with Red Hills listed species will not be transferred out of public ownership. Extending ACEC status to all lands in the area supporting listed species as proposed in the Draft RMP confirms this position.

Wildfire

A modified suppression plan has been written for the Red Hills ACEC. Key elements include avoidance of the use of heavy equipment and avoidance of the use of fire retardant chemicals with fertilizer. This plan will be extended to additional lands proposed for addition to the ACEC, with the addition of these parcels to the ACEC.

Fuels Treatments for Public Safety

Because BLM parcels in the Red Hills are not close to developed areas, the need for fuels projects is not anticipated. Should development reach this area in the future, and if fuels projects become necessary, the following approach will be adopted:

Fuels treatments in special status species habitat will be designed to have the minimum impact on the special status species. Modifications of fuels projects that may reduce impacts include:

1. Avoidance of the species habitat,
2. Avoidance of the species, (e.g., creating buffers around individual plants or clusters of plants),
3. Temporal avoidance including brush clearing (without soil disturbance) during periods when an herbaceous perennial sensitive species has died to its base, or when an annual species has completed its life cycle,
4. Hand clearing instead of the use of heavy equipment,
5. Mastication instead of blading (if heavy equipment is used),
6. Fall burning instead of mechanical clearing.

Methods chosen for specific projects will reflect the practicalities of fuel break construction or fuels reduction in a specific vegetation type, as well as the ecological requirements and vulnerabilities of the sensitive species involved. Methods for clearing brush like blading or chaining with a tractor that cause extensive soil disturbance will not be used in special status species habitat unless it has been demonstrated by monitoring studies that such clearing methods constitute conservation measures for that species.

Introduction—Special Status Gabbro Plant Species of El Dorado, Nevada and Yuba Counties Managed by BLM

This portion of the overall rare plant strategy will cover the following six species:

- *Calystegia stebbinsii*
- *Ceanothus roderickii*
- *Fremontodendron decumbens*
- *Galium californicum sierrae*
- *Senecio layneae*
- *Wyethia reticulata*

and all the habitat they occupy, with the exception of the *Senecio layneae* occurrences in the Red Hills (covered in the Red Hills strategy):

These species occur in the following locations on public land:

	Pine Hill area, El Dorado County	Red Hills, Tuolumne County	Grass Valley area, Nevada County	Brownsville area, Yuba County
<i>Calystegia stebbinsii</i>	X		X	
<i>Ceanothus roderickii</i>	X			
<i>Fremontodendron decumbens</i>	X		dwarf Fremontodendron*	dwarf Fremontodendron*
<i>Galium californicum sierrae</i>	X			
<i>Senecio layneae</i>	X	X		X
<i>Wyethia reticulata</i>	X			

* These *Fremontodendron* populations display differences from both the common tall *Fremontodendron* of the foothills, *F. californicum*, and from the dwarf species, *F. decumbens*, in El Dorado County. Further taxonomic work is needed.

Prioritized Goals

Goals for El Dorado County

Note: The area involved runs from Highway 50 in the vicinity of Cameron Park north to Salmon Falls on the South Fork American River. BLM lands are all included in the interagency Pine Hill Preserve.

1. Acquisitions:
 - a. Use grants or LWCF appropriations to purchase high-quality habitat, using USFWS recovery plan as guidance.
 - b. Accept title to other appropriate lands, (for instance those included in the Recovery Plan boundaries), donated by other agencies for inclusion in the Pine Hill Preserve.
2. Preserve manager: As long as funding is available from partner agencies, and as long as a consensus of the Preserve partners continues to support this approach, provide a BLM employee to act as manager for the Pine Hill Preserve.
3. PHP management: Participate in the interagency Pine Hill Preserve Management Group, providing technical assistance and material support for management actions on Preserve lands; actions on BLM lands, and actions on non-BLM Preserve lands as well.
4. PHP management plan: Participate actively in the formulation of the Management Plan for the Pine Hill Preserve. (The plan is on track to be completed in 2007.)
5. Monitoring: Work within the Pine Hill Preserve framework to establish an overall monitoring plan for the listed species in the Preserve. Use funds appropriated to USFWS and transferred to BLM to create a baseline for monitoring by population boundary delineation with GPS and incorporation of the data into BLM's GIS. (Many populations have been roughly mapped on paper by field approximation, but not verified through GPS or entered into BLM's GIS). Develop special monitoring plans for fuel reduction projects and burns.
6. Fuels treatments for public safety: Use available information about species population distribution to plan fuels treatments to avoid unnecessary impacts to listed and sensitive species. Do site-specific detailed inventories as necessary.
7. Fuels treatments for public safety: Increase available information about management effects to the special status species of the Preserve by having BLM botanist and/or Preserve Manager participate in planning and executing fuels treatments and monitoring for fuels treatment effects. Trials of different treatments for reducing fuels may produce information that refines treatment prescriptions,

- reducing negative effects and increasing positive effects for listed and sensitive species. Each species may respond differently to each treatment option.
8. Weed control: Address impacts of invasive plant species to listed and sensitive plant species. Eradicate weeds from locations where they are impacting listed and sensitive plant species where that is possible. Control weeds to minimize impacts where eradication is not possible.
 - a. Assess weed infestations for threats posed to listed species, and threats posed to the plant community as a whole.
 - b. Use non-chemical means to control invasive plants where that is practical.
 - c. Use of herbicides to combat weeds in listed species habitat will only occur if:
 - i. Weeds are impacting the listed species.
 - ii. Other control methods have been unsuccessful.
 - iii. The herbicide's action spectrum will not affect the listed species.
 - iv. A small scale trial to see the on-site effects of the herbicide has been completed and results show that the listed species are unaffected, or effects are negligible and acceptable.
 9. Modified fire suppression plans: Update the modified suppression plan for the Pine Hill Preserve area for BLM's Cooperative Fire Protection Agreement with CDF. Include provisions for extending the plan as the Preserve expands.
 10. Research: Within the Pine Hill Preserve framework, solicit colleges and universities to research fire and fuels treatment effects on listed species, as well as the basic autecology of the listed plant species of the Preserve. BLM will work with such researchers to coordinate research and management, and to navigate permitting and consultation when required.
 - a. Seek agreement from USFWS to facilitate research and monitoring at the Pine Hill Preserve by responding to requests for permits and permit amendments for research and monitoring within 8 weeks.
 11. Contribute to accomplishing Recovery Plan goals, including goals that are not encompassed by the Management Plan for the Pine Hill Preserve.
 12. ACEC:
 - a. Designate BLM lands in the Pine Hill Preserve as an ACEC.
 - b. Adopt an ACEC management plan. This plan may be the same as the interagency Management Plan for the Pine Hill Preserve.
 13. There is one known BLM occurrence of one of the 5 listed plant species of the Pine Hill Preserve that occurs outside the Preserve in El Dorado County. It is a Layne's butterweed occurrence near Norton Ravine on serpentine. It will be highlighted for planning. Conduct further inventories in this area.
 14. Erosion control: Retard active gully erosion by rehabilitation of gullied landscapes. Measures may include diversion of water flow, revegetation, and regrading in some instances. The destruction of individuals of listed plant species may be necessary to maintain or increase habitat integrity for listed species, resulting in a longer term net benefit for the species.
 15. Rehabilitation of badly disturbed areas: Revegetate abandoned roads, pipeline rights-of-way, or other unnatural disturbances, when natural regeneration is very slow, the threat of invasion by non-natives is high, or the threat of erosion is high. Use dominant shrubs, common herbs, sensitive or listed species collected locally, that are components of the native plant communities (mostly Northern gabbroic mixed chaparral). Collection of seeds or cuttings of listed species for this purpose will be under a 10(a)(1)(A) permit.
 16. BLM to seek a mineral withdrawal for Pine Hill Preserve lands. Consideration of the expansion of the Preserve will be made part of this process. Whether such a withdrawal will occur is ultimately in the hands of the Department of Interior.
 17. Fuels Plan: Work with CDF on creating a fuels plan for the Preserve.

- a. If fuels are not controlled, the possibility that a wildfire in the Preserve area will threaten lives and property and lead to an all-out suppression effort is increased. In such an all-out wildfire control effort, potential impacts to biological resources will be disregarded. It is likely that wide dozer lines will be cut across Preserve lands and other major impacts to habitat will occur.
 - b. It may be determined that there is a conservation benefit from breaking larger units of the Preserve into separate fire suppression units separated by fuelbreaks, to provide insurance against a catastrophic fire that burns an entire Preserve Unit, with unknown biological effects. Fuelbreak construction would have major impacts and would necessitate detailed environmental analysis.
18. Modified fire suppression plans: Work within the framework of the Pine Hill Preserve Management Group to extend fire suppression guidelines to other lands within the Preserve owned by other agencies.
 19. Prescribed burning: To make sure that burns are executed within a prescription that furthers conservation goals, provide BLM fire expertise to plan and execute any prescribed burns. BLM fire can act as a liaison between CDF and the Preserve Manager. California Department of Forestry and Fire Protection and local fire departments will provide most of the personnel and equipment for prescribed burns.
 20. Prescribed burning: To assure burning is conducted in a manner that most benefits listed and sensitive species, and that the most information is captured to refine future management, the Preserve Manager and/or BLM botanist will participate in planning and executing burns, and monitoring for burn effects.
 21. Explore grants and funding partnerships with other agencies and nonprofits that share BLM conservation goals, to finance on-the-ground conservation actions and acquisitions.
 22. Support education and outreach to: (1) increase public understanding of, and support for, agency conservation actions; (2) spur volunteer participation in conservation activities; and (3) to increase the awareness of nearby property owners who may have opportunities to conserve the species on their own property.

Goals for Nevada and Yuba Counties

The areas involved are the Deadman's Flat area west of Grass Valley in Nevada County, and the public land west of Brownsville in Yuba County. See the table in the introduction at the beginning of this strategy for which listed species occur in these areas

1. Landfill retention: Folsom Field Office will work with other tiers of BLM to attempt to retain all or portions of a former landfill site (a 40 acre lease) with habitat for one listed species, Layne's butterweed, and a population of a dwarf flannelbush with close affinity to the listed species, Pine Hill flannelbush. BLM has issued strict guidance that we are to divest of the ownership of all former landfills. Retention would involve making an exception for this instance. The Endangered Species Act may provide sufficient justification for this exception. If the landfill site is transferred from BLM to other ownership, make provisions for a conservation easement, or other mechanisms to guarantee the conservation of the species, and if possible, plant community as well.
2. Fuelbreak construction in the Brownsville area: BLM has been requested to join an ongoing effort to create a fuelbreak to help to protect the hamlet of Brownsville from wildfire. Private land adjacent to BLM lands have already been cleared by masticating equipment. BLM is actively participating in many such efforts in various other communities in the foothills. BLM will balance several obligations: (1) provide for public safety; (2) conservation and recovery of listed species; and (3) provide for biodiversity by the conservation of unusual plant communities. Fuel breaks on BLM land will be

designed to minimize or eliminate impacts to listed species habitat. Prescribed burning will be considered as an alternative means of fuel reduction, especially in *Fremontodendron* habitat. Of course, mechanical line construction would be necessary to make possible prescribed burning. And fuels reduction can function as a conservation tool where it can reduce the likelihood of environmentally damaging fire suppression actions in the event of wildfire.

3. Research: BLM will continue to work with Walter Kelman of CSIRO, Australia to develop information about the taxonomic status of the *Fremontodendron* populations of Nevada and Yuba counties.
4. USFWS to provide collection permits to appropriate BLM employees when it will facilitate research on the listed gabbro species. Turn around time to receive the permits will not exceed 8 weeks.
5. Modified fire suppression plans: Write modified suppression plans for both areas for BLM's Cooperative Fire Protection Agreement with CDF. Work with CDF and local communities on creating fuels plans for both areas. If fuels are not controlled, the possibility that a wildfire in either area will threaten lives and property and lead to an all-out suppression effort is greatly increased. In such an all-out wildfire control effort, habitat values will be disregarded and major impacts to habitat (like wide dozer lines) are likely.
6. Inventory: Extend inventories for listed and sensitive species in both areas.
7. Monitoring: Establish an overall monitoring plan for the listed species and the *Fremontodendron* in both locations. Part of this monitoring should be population boundary delineation with GPS and incorporation of the data into BLM's GIS. (Some populations have been mapped on paper by field approximation, but not GPS'd, and not entered into BLM's GIS.) Develop a practical monitoring plan that focuses on habitat integrity and listed species.
8. Weed control: Address impacts of invasive plant species to listed and sensitive plant species. Eradicate weeds from locations where they are impacting listed and sensitive plant species where that is possible. Control weeds to minimize impacts where eradication is not possible. Assess weed infestations for threats posed to the plant community as a whole as well.
 - a. Use non-chemical means to control invasive plants where that is practical.
 - b. Use of herbicides to combat weeds in listed species habitat will only occur if:
 - i. Weeds are impacting the listed species.
 - ii. Other control methods have been unsuccessful.
 - iii. The herbicide's action spectrum will not affect the listed species.
 - iv. General treatment with herbicides will be deferred until after a small scale trial to see on-site effects of herbicide use.
9. Acquisitions: Private land adjacent to public land with significant habitat for listed and sensitive species should be evaluated for acquisition from willing sellers. Similarly adjacent land that would permit more effective management of rare species or plant communities should be evaluated for acquisition from willing sellers. Maintaining the integrity of these two unusual chaparral communities also will be considered in all lands actions. Such acquisitions will be evaluated in terms of their priority among other possible acquisitions for public purposes.
10. Fuelbreak construction in the Deadman's Flat area: Fuelbreak construction in this area has been performed by CDF crews with little BLM oversight in years past. BLM will work with CDF to evaluate the fuels situation and develop a fuels plan. BLM will balance several obligations: (1) provide for public safety; (2) conservation and recovery of listed species; (3) conservation of biodiversity by maintaining unusual plant communities. Fuel breaks on BLM land will be designed to minimize or eliminate impacts to listed species habitat. Prescribed burning will be considered as an alternative means of fuel reduction, especially in *Fremontodendron* habitat. Of course, mechanical line construction would be necessary to make possible prescribed burning. And fuels reduction can function as a conservation tool where it can reduce the likelihood of environmentally damaging fire suppression actions in the event of wildfire.

11. ACEC: BLM will work with local interested parties to explore whether the public land west of Grass Valley (Deadman's Flat) or the public land west of Brownsville in Yuba County deserves Area of Critical Environmental Concern status. Both areas have distinct plant communities and support at least one federally listed plant species. In the Grass Valley area, consider including nearby serpentine public lands (e.g., Slate Creek) in any ACEC designation. (Deadman's Flat ACEC is proposed in this RMP. Brownsville ACEC is not proposed.)
12. Restoration of the Brownsville landfill: The landfill consists of two main excavations that were covered with soil and seeded to grasses.
 - a. There are badly eroded portions of the landfill site. (The substrate has been altered and this area has mostly been converted to an alien plant community, Mediterranean annual grassland.) Erosion control measures will be instituted with the conservation of the listed species always considered. Measures may include diversion of water flow, retarding water flow, revegetation, and regrading in some instances.
 - i. In the consultation process, USFWS to support this effort by allowing the destruction of individuals of listed plant species in those situations where the sacrifice of individuals is necessary to maintain or increase habitat integrity for listed species.
 - b. The specifics of landfill construction and closure measures will be investigated. Answers will be sought to questions such as the source of the soils that cover the fill, the depth of soil material atop the fill, fertilizer use, etc. If sufficient information is available, an evaluation of the feasibility of restoration of elements of the native plant community will be undertaken.
13. Contribute to accomplishing Recovery Plan goals outside the Pine Hill Preserve as well as inside the Preserve.
14. Mining: If and when mining threatens listed species or their habitat, segregate the land and seek a mineral withdrawal.
15. Explore grants and funding partnerships with other agencies and nonprofits that share BLM conservation goals, to finance on-the-ground conservation actions and acquisitions.
16. Support education and outreach to:
 - (1) increase public understanding of, and support for, agency conservation actions;
 - (2) spur volunteer participation in conservation activities; and
 - (3) to increase the awareness of nearby property owners who may have opportunities to conserve the species on their own property. Work with Ponderosa Park at the Yuba Brownsville site to increase their awareness of the rare species within and adjacent to the park. The park is leased from BLM under a Recreation and Public Purposes Lease. The lease holders have opportunities to negatively or positively impact the species, and opportunities to educate the larger community of park users.

Avoidance of Adverse Impacts

General

1. When ground-disturbing activities are planned for special status species habitat, spatial avoidance of the entire habitat should be given the highest priority. Other avoidance strategies risk some level of impact.
2. Spatial avoidance of areas with observed special status plants with no avoidance of adjacent potential habitat can avoid most plant injury. However seeds or some dormant underground structures may still be affected because propagules may occur beyond the boundary of existing plant populations. Effects to habitat and key habitat elements like soils or pollinators may still occur.

3. Temporal avoidance of habitat can only prevent above-ground plant injury for annuals and perennials that die back seasonally. Direct effects (like crushing) to shallow underground structures and seeds may still occur. Soil compaction or movement may affect seeds or underground structures as well. Effects to habitat and key habitat elements like soils or pollinators may still occur.

Grazing

No grazing leases are authorized where these gabbro listed plant species occur. No grazing leases will be issued in the habitat of these listed species.

Minerals

ACEC status is proposed for most public land gabbro-plant listed species habitat, as part of two proposed ACECs; Pine Hill and Deadman's Flat. The exceptions are one small occurrence of Layne's butterweed near Norton Ravine on the South Fork American River that will not be included in an ACEC and several small occurrences of Layne's butterweed at the Yuba Brownsville site. (The Norton Ravine occurrence is segregated from mineral entry and will be included in a proposed mineral withdrawal.) The filing of a plan of operations is required for any mechanized mining operation within an ACEC. A plan of operations is also required in situations where a listed species will be affected by a proposed mining operation. However ACEC status of an entire parcel can create an additional buffer around a listed species occurrence and also protect associated sensitive species. BLM has the authority to approve or disapprove mining plans of operation, therefore BLM can modify projects to reduce or eliminate environmental impacts.

Recreation

In the Pine Hill Preserve, only non-motorized recreation will be allowed, with the possible exception of one road that has a history of receiving heavy recreational use. This road is currently unused because private landowners have cut off public access. There are a handful of Stebbins' morning glory plants concentrated at one point along the road, and a few dispersed Layne's butterweed plants on the cut bank along another section of the road. Vehicle activity on the road itself is unlikely to affect these plants, although it could affect potential reproduction of the plants in the road. The Pine Hill Preserve Management Plan which will focus on the conservation of the listed plant species will determine the status of this road as well as any other recreational uses to occur at the Preserve. If the proposed ACEC at Deadman's Flat is adopted in the RMP, an ACEC management plan will be written. This plans will specify the types of recreation that will allowed, i.e., recreation deemed to be compatible with conservation of the listed species and rare plant communities at the site. There is an existing park lease at the Yuba Brownsville site, where the lease holders have created extensive facilities including ball parks, paved trails and tennis courts. Negotiations with the holders of the lease will be needed before changes in recreation management can occur there. In these discussions, conservation of the Layne's butterweed that occurs within the park lease will be the highest BLM priority.

Timber

A scattering of ponderosa pine is virtually all of the scarce timber resource in this area. No timber sales will occur in listed species habitat, unless there is convincing evidence that such a sale will benefit the listed species.

Lands

Lands with gabbro listed species will not be transferred out of public ownership. A possible exception is the 40-acre property at the old Yuba County landfill site by Brownsville. This land was leased for the landfill (since closed) and most of the site is highly disturbed. Where trash was disposed, the native substrate is deeply buried and non-native grassland is growing atop the fill. But at the edges of the property there are less disturbed areas supporting native chaparral including a small number of Layne's butterweed plants and a stand with a dwarf *Fremontodendron* closely related to Pine Hill flannelbush. Local BLM offices have been instructed to dispose of landfill sites to lessees, to limit federal liability for toxic materials in the landfill. So there may be pressure within the Bureau to dispose of this parcel. If such a disposal were to occur, Section 7 consultation would occur and provisions for the conservation of the species would be made. A conservation easement is one possible mechanism to maintain conservation management. Another approach might be the subdivision of the parcel allowing for the retention of portions of the lease area that support listed species and less-disturbed habitat. (Unfortunately for this approach, the landfill is central to the parcel.)

Wildfire

A modified suppression plan has been written for the Pine Hill Preserve. Key elements include avoidance of the use of heavy equipment and the use of fire retardant chemicals with fertilizer. If the proposal for the designation of a Deadman's Flat ACEC is adopted in the final RMP, modified suppression plans for that area will follow. Although a Yuba Brownsville ACEC is unlikely to emerge in the final RMP, a modified suppression plan is nonetheless appropriate because of the presence of the federally threatened species, Layne's butterweed. When the other changes to modified suppression plans emerging from the RMP are presented to CDF, a Yuba Brownsville plan should also be discussed.

Fuels Treatments for Public Safety

A fuelbreak has been created along much of the perimeter of the Cameron Park Unit of the Pine Hill Preserve to protect the dense residential development there from wildfire. Such fuelbreak construction will need to continue at Cameron Park and at other units of the Preserve. The conservation needs of the listed plant species were important factors in the selection of techniques for fuel reduction, and will continue to be. The development of additional knowledge about the impacts of various fuel reduction techniques has also been a priority.

There have been requests from the community at Brownsville for fuels reduction in that area. And a county supervisor has contacted our office about starting fuels reduction at Deadman's Flat.

Fuels treatments in special status species habitat will be designed to have the minimum impact on the special status species. Modifications of fuels projects that may reduce impacts include:

1. Avoidance of the species habitat,
2. Avoidance of the species, (e.g., creating buffers around individual plants/shrubs or clusters of plants/shrubs),
3. Temporal avoidance including brush clearing (without soil disturbance) during periods when an herbaceous perennial sensitive species has died to its base, or when an annual species has completed its life cycle,
4. Hand clearing instead of the use of heavy equipment,
5. Mastication instead of blading (if heavy equipment is used),
6. Fall burning instead of mechanical clearing, (especially when listed species seed germinates in response to fire),

7. Pile burning of cut and piled brush, rather than mastication (especially when listed species seed germinates in response to fire).

Methods chosen for specific projects will reflect the practicalities of fuel break construction or fuels reduction in a specific vegetation type, as well as the ecological requirements and vulnerabilities of the sensitive species involved. Methods for clearing brush like blading or chaining with a tractor that cause extensive soil disturbance will not be used in special status species habitat unless it has been demonstrated by monitoring studies that such clearing methods constitute conservation measures for that species.

Conservation Strategy for Sensitive Plant Species Managed by BLM

Introduction—What are BLM Sensitive Plant Species?

BLM “sensitive” plants are those rare plant species designated by BLM California State Director as sensitive because of rarity or threats. BLM sensitive plant species form a part of a larger group of plant species called “special status species” by BLM by virtue of being listed, proposed, or candidates for listing under the Federal Endangered Species Act, listed under the California Endangered Species Act, or designated as sensitive by BLM State Director. The State Director uses the California Native Plant Society List 1B, “Rare, Threatened, or Endangered in California and Elsewhere” as the basis for his list of sensitive species.

Structure of this Conservation Strategy

Because each plant species has different ecological requirements, as well as different situations on public lands (distribution, ongoing management etc.), the strategy for each plant species is somewhat different. However for all the sensitive plant species, portions of the strategy will be the same. For all the species “Prioritized Goals” and “Avoidance of Adverse Impacts” will have similarities. At the beginning of this document there are sections with these titles. These sections are applicable to all the sensitive plant species in this strategy. When an individual species has particular characteristics requiring further discussion of these topics, the headings are repeated with additional information in the portion of the strategy that discusses that particular species.

Prioritized Goals for All Sensitive Plant Species

1. Maintain the viability of all sensitive plant populations on BLM lands.
2. Manage sensitive plant populations so that they remain stable or increase over time.
3. Manage sensitive plant populations so that all life history stages are maintained. For instance, a live seed bank is an important phase of populations of those species that bank seeds, and maintaining the seed bank should be a management priority. However for some species that reproduce cyclically (e.g., fire followers), not all life history stages will be equally represented at one point in time.
4. Retain sensitive species habitat. (In situations where there are compelling reasons to dispose of habitat, evaluate if disposal of habitat would be detrimental to overall conservation of the species. Consider both the overall distribution of the species, and that portion of the species’ overall distribution that is permanently protected in conservation status.)
5. Acquire additional priority sensitive species habitat. Priority should be given to species that may be federally listed in the foreseeable future, species that are similarly imperiled, and populations of species with particular conservation value (e.g., disjunct populations). BLM will make such acquisitions only from willing sellers at fair market value. BLM often acquires lands for conservation purposes through grants and donations, and these avenues should be explored for priority potential acquisitions.

6. Inventory all appropriate habitat to assure that we are aware of sensitive species populations on BLM land.
7. Explore the use of conservation easements to protect sensitive species habitat located on private lands. This strategy is particularly appropriate where priority populations extend from public land onto adjacent private land.
8. Provide sensitive species education where/when needed, by posting signs, handing out published material, and offering presentations. These measures are particularly appropriate when visitors to public lands are causing impacts to sensitive species populations, or when actions of private landowners can impact sensitive species on their own properties or on public land.

Avoidance of Adverse Impacts for All Sensitive Plant Species

General

1. When ground-disturbing activities are planned for special status species habitat, spatial avoidance of the entire habitat should be given the highest priority. Other avoidance strategies risk some level of impact.
2. Spatial avoidance of areas with observed special status plants with no avoidance of adjacent potential habitat can avoid most plant injury. However seeds or some dormant underground structures may still be affected because propagules may occur beyond the boundary of existing plant populations. Effects to habitat and key habitat elements like soils or pollinators may still occur.
3. Temporal avoidance of habitat can only prevent above-ground plant injury for annuals and perennials that die back seasonally. Direct effects (like crushing) to shallow underground structures and seeds may still occur. Soil compaction or movement may affect seeds or underground structures as well. Effects to habitat and key habitat elements like soils or pollinators may still occur.

Program specific measures that apply to most or all sensitive species

Grazing

1. All grazing leases not previously surveyed will be surveyed for T, E and S species at the time of grazing lease renewal, if not sooner. If lease surveys were incomplete initially, they should be extended.
2. If new sensitive species populations are found, the plants will be examined for evidence of grazing impacts. Plants will be examined for signs of clipping and trampling. Removal of inflorescences, flowers or fruits will be noted.
3. If extensive grazing impacts are observed, and if there is no evidence that the species does well with grazing (one form of evidence of grazing compatibility would be extensive populations of the sensitive species on grazed private lands for instance), then an enclosure study will be set up to compare the vigor of grazed and ungrazed portions of the same population. An unreplicated experiment comparing two carefully chosen plots (similar in terms of biotic and abiotic factors that could affect plant growth) can be used initially. If results from this pair suggest significant negative impacts from grazing, a replicated enclosure study should be established, unless the lease is modified or canceled to alleviate grazing impacts based on information already gathered. Neither stage of study (unreplicated or replicated) need exceed 5 years. Therefore by the next lease renewal cycle a determination of grazing compatibility or grazing incompatibility will be reached. Appropriate action can range from lease renewal, to lease modification or cancellation consistent with the results of

monitoring. Fencing of vulnerable sensitive species populations is one possible lease modification. Change in season of use is another lease modification that can reduce grazing impacts.

4. Sensitive species populations should be resurveyed at the time of lease renewal for monitoring purposes. GPS data should be collected each cycle, either as baseline, or for comparison with baseline. When it is feasible, numbers of plants (or ramets) should be estimated. If there are many occurrences of the same species on the lease, and those occurrences are subjected to similar grazing regime, one or more occurrences should be selected for monitoring. This choice should be documented so that the same occurrences will be observed with each lease renewal cycle.
5. No new grazing leases will be issued in listed or sensitive species habitat unless there is evidence that the sensitive species benefits from grazing or grazing has no detrimental effect. If there is compelling reason to consider grazing, and there is no preexisting information about grazing impacts, a year-to-year lease arrangement with an accompanying exclosure study can be instituted to reveal grazing effects. Only when such a study shows that grazing is compatible with the sensitive species will a standard long-term lease be issued. Alternatively the sensitive species occurrence can be fenced and left ungrazed.

Minerals

Locatable minerals (subject to the 1872 Mining Law)

1. Evaluate each Notice and Plan of Operations for the presence of sensitive species.
2. Work with BLM geologist to have claimants modify Plans of Operations that will impact sensitive species. Avoidance of the population will be the usual modification. Similarly work with geologist to persuade claimants to modify their Notice-level operations. (Unlike Plans, Notices can not be rejected. So BLM's ability to affect Notice level operations is less than for Plan level operations.)
3. Seek mineral withdrawals in those cases where a particular sensitive species population is critical to the conservation of the species, and there is a likelihood of mineral entry. Because the process to initiate a withdrawal is time consuming, and the Department is resistant to withdrawing land from mineral entry, prioritize mineral withdrawal efforts. Document these priorities in the RMP.

Saleable and leasable materials:

These are discretionary BLM actions (unlike activities under the 1872 Mining Law) and will be treated like other ground disturbing activities that have potential to impact sensitive species. Avoidance will be the principle that guides sale and lease actions. For oil and gas leases (a very rare occurrence in our area), slant drilling is a potential tool for avoiding sensitive species impacts.

Lands Actions

1. Acquisitions: Acquisitions will be considered on a case by case basis if significant recovery habitat for listed or sensitive species becomes available from willing sellers. Listed species will generally take priority, but in many areas listed and sensitive species share habitat. Where recovery plans exist, they will be used as guidance for acquisition priorities.
2. Disposals: In general, BLM will retain sensitive species habitat. However in instances where the habitat considered for disposal makes little contribution to the species' overall viability, and especially for those species that are relatively widespread and abundant, land disposals will be evaluated on a case by case basis. Such a disposal will only occur after an evaluation of the species' status throughout its range and with the approval of BLM State Director, in accordance with California BLM policy.

3. Rights-of-way, leases: These are discretionary BLM actions. In most cases the proponent can accomplish their goal with adjustments to the project that avoid impacts to sensitive species. Usually modifications to project design can avoid impacts.

Recreation

Motor vehicles: Where motor vehicle activity is occurring off-road in sensitive species habitat, take measures to prevent OHV impacts to sensitive species. Measures may include designating open and closed roads, signing, soil and rock berms, boulder or other barriers, fencing, closure orders, enforcement, etc.

Occasionally roads may need to be closed for rare plant protection even though the roads themselves can be driven without affecting sensitive species. Some roads provide access to areas where drivers routinely take their vehicles off-road. In some instances closing these roads is the only practical way to prevent the off-road activity.

Limit vehicle access on existing roads where vehicles are causing sensitive species habitat degradation; particularly erosion and dumping. Measures may include signing, berms, rock or other barriers, fencing, closures, putting roads to bed, enforcement, etc.

Horseback, mountain bike and foot travel: New trails and facilities associated with recreation should avoid sensitive species habitat, except when a comprehensive environmental assessment establishes that the recreational use is compatible with species conservation. In some cases trails may be deliberately placed in sensitive species habitat to provide opportunities for interpretation. Again potential negative effects must be carefully evaluated. Measures to avoid negative impacts from visitation should be incorporated in projects that bring recreational users into sensitive species habitat.

Where non-motorized recreational use is concentrated and may pose a threat to sensitive species, take measures to limit use to existing trails. Measures may include signing, fencing, closures, enforcement, etc. Where even the use of existing trails is leading to negative impacts (accelerated erosion on trails affecting adjacent plant habitat for instance) evaluate rerouting trails. In some instances there may be no alternative route that will lessen impacts. If some other measure (like mechanical reinforcement of the trail to reduce erosion) is not feasible, abandoning and rehabilitating that portion of the trail should be considered.

Wildfire

Have a modified suppression plan for each listed species habitat area. These plans will be included in BLM's Cooperative Fire Protection Agreement with CDF&FP. Include sensitive species habitat with listed species habitat as appropriate. Probably only the most significant of sensitive species populations will warrant such protection, unless the population can benefit from geographic association with listed species. A BLM resource adviser will be assigned to fires where there is reason to anticipate impacts to sensitive species, whether or not a modified suppression plan is in place. In wildfire situations, modified suppression plans may not be implemented without a resource adviser on site to raise conservation issues.

Fuels Treatments for Public Safety

Fuels treatments in sensitive species habitat should be designed to have the minimum impact on the sensitive species. Modifications of fuels projects that may reduce impacts include:

1. Avoidance of the species habitat,
2. Avoidance of the species, (e.g., creating buffers around individual shrubs or clusters of shrubs),
3. Temporal avoidance including brush clearing (without soil disturbance) during periods when an herbaceous perennial sensitive species has died to its base, or when an annual species has completed its life cycle,

4. Hand clearing instead of the use of heavy equipment,
5. Mastication instead of blading (if heavy equipment is used),
6. Fall burning instead of mechanical clearing.

Methods chosen for specific projects will reflect the practicalities of fuel break construction or fuels reduction in a specific vegetation type, as well as the ecological requirements and vulnerabilities of the sensitive species involved. Methods for clearing brush like blading or chaining with a tractor that cause extensive soil disturbance will not be used in sensitive species habitat, unless it has been demonstrated that such clearing methods constitute conservation measures for that species.

Two basic strategies of fuels modification are commonly practiced:

1. Fuel breaks provide linear gaps in otherwise unbroken fuels to anchor fire fighting efforts. Often these projects are 200' wide or less, but some fuel breaks are wider. Fuel breaks are unlikely to modify an entire ecosystem. Habitat fragmentation is one possible impact of fuel breaks.
2. Broad scale fuels reduction projects change the fuels profile over a large area. The overall quantity of fuels available to a potential wildfire is reduced. Broad scale fuels reduction often involves converting vegetation to an earlier seral stage. Especially with repeated treatments, such landscape scale projects can sometimes lead to a long-term or permanent conversion of vegetation to a different plant community. Where such type conversions occur, virtually every plant species will be affected. Pollinators and herbivores are likely to be affected as well. All such effects should be evaluated in an environmental assessment.

Timber/Fuelwood Sales/Plant Collecting

Proposals for timber and fuelwood sales should rarely be issues for the listed species that occur on public land managed by Folsom F.O.; the listed species are mostly found in chaparral communities. If there is a proposal for logging or fuelwood sales in listed species habitat, it will be denied, unless it can be demonstrated that it will have no impact, or a beneficial impact, for those listed species.

On the other hand several sensitive species of Folsom F.O. can be found in forest sites. Fuelwood and timber sale boundaries can be adjusted to avoid these species in most cases. In cases where species avoidance is not practical and the project has merit, the potential impacts to the sensitive species must be carefully assessed. Several of the sensitive species that occur in forest habitats are annuals or herbaceous perennials that die back to a rootstock each year. In those cases, timing the sales so that activity occurs well after seed set for annuals, and vegetative growth and seed set for perennials, is a strategy to lessen impacts. All phases of the project will be considered including constructing landings and skid trails, falling and skidding, and rehabilitation operations like site preparation and planting. As with all other BLM actions in which the environmental assessment process shows a potential negative effect to one or more sensitive species, such a sale will only occur after an evaluation of the species' status throughout its range indicates the effect on the species will be minor, and with the approval of BLM State Director, in accordance with California BLM policy.

Weed Management:

All forms of weed management have the potential to impact non-target species. BLM weed management is focused on areas of high recreation use and areas where special status species habitat is being degraded by weeds. When weed management occurs in the habitat of special status species, it will almost always be with the goal of improving habitat for that species, or other associated special status species. In special status species habitat the most precisely targeted weed control methods will be used preferentially over those that affect a wider range of species. For instance hand pulling will be favored over mowing if the control of a single weed species is the desired result, and there is sufficient person-power to accomplish the goal by hand pulling. Monitoring of the effects of a weed control method on a special status species should be employed

whenever a weed control method is used in special status species habitat, and the effects of that method on that special status species have not been established.

Use of herbicides to combat weeds in special status species habitat should only occur if:

1. Weeds are impacting special status species.
2. The other feasible weed control methods have been tried, and they have been found to be unsuccessful.
3. The herbicide is selective and its action spectrum is such that it should not impact any special status species in the project area, or the herbicide can be applied in a highly targeted manner that will prevent uptake by special status species (e.g., injection of herbicide into woody weed species may meet this criterion).
4. Non-selective herbicides will only be considered for use in areas without special status species. Such non-selective herbicide use should only be considered if effective selective herbicides are not available.

If these criteria are met and the decision to use an herbicide is made, then general treatment with herbicides will be deferred until after a small scale trial of the herbicide, to demonstrate the effects of the herbicide on site on special status species present. A monitoring plan will be developed and it will include at a minimum these kinds of monitoring:

1. Effectiveness of the treatment in reducing target weeds
2. Impacts to special status species in the area

Conservation Plans for Individual Special Status Species

The special status species discussed in detail below are those species for which BLM manages significant habitat and for which BLM management plays a meaningful role in the conservation status of the species. Individual conservation strategies have not been written for all BLM sensitive species. For instance, *Mimulus pulchellus*, pansy monkeyflower, does not have an individual conservation strategy. In this instance BLM manages only 1 of the 26 occurrences of the species listed in the California Natural Diversity Data Base. BLM management has little effect on the overall conservation status of the species. BLM sensitive species *Clarkia biloba brandegeae*, Brandegees clarkia; *Erythronium tuolumnense*, Tuolumne fawn lily; *Lewisia cantelovii*, Cantelow's lewisia; and *Mimulus filicaulis*, slender-stemmed monkeyflower are omitted for similar reasons from the following section of individual conservation strategies.

Allium jepsonii

Proposed Action

Objective

To manage the Jepson's onion population that occurs on Bureau of Land Management administered lands and adjacent private land so it remains viable and stable.

Species Specific Goals

1. Establish and mark the corners of BLM parcel that supports *Allium jepsonii*. There are well over 500 plants in the immediate vicinity of BLM parcel, which is only 8 acres. But without more precise information as to the location of the corners of the property, which are apparently unmarked, it is difficult to tell how many of these plants are indeed on public land. The majority may be on adjacent private land. Use the boundary information to get public-land-specific baseline information about the population, e.g., numbers of plants on public land.

2. Attempt to establish a relationship with one or more neighboring landowner to allow administrative access to BLM parcel. The parcel is landlocked by surrounding private land.
3. Investigate surrounding land use, especially grazing, to determine if there are impacts to *Allium jepsonii* on federal land.
4. Attempt to establish a relationship with one or more neighboring landowner to let us know in the future if there are land use changes that might affect the onion population on federal land.
5. Attempt to establish relationships with adjacent private landowners that own land that supports portions of the *Allium jepsonii* population, to encourage them to manage their land in a manner that is compatible with the continued growth of *Allium jepsonii* on their land.
6. Monitor to assess grazing impacts if grazing appears to be a factor. Set up two plots, and fence one of them, to prevent grazing by domestic animals. Monitor both plots for impacts. If feasible, consider comparing grazed private land to ungrazed public land.
7. Manage consistent with the results of monitoring. Fence the entire parcel if monitoring indicates that grazing is having a negative impact on the population, and grazing of adjacent land will continue. Continue monitoring after fencing. On the other hand, work with neighboring landowners who graze to maintain grazing, if monitoring indicates a positive impact from grazing. Continue monitoring after any change in the grazing regime that might have an impact. Use adaptive management to refine management.

Species Specific Avoidance of Adverse Impacts

Lands actions

Retain parcel in public ownership.

Grazing

Because the 8 acre BLM parcel where *Allium jepsonii* occurs is unfenced and neither the corners nor the boundaries are marked, this parcel has been grazed with surrounding private land. Apparently most of the use is by horses. Grazed plants have not been observed in several site visits during the spring growing season. Dale McNeal, University of the Pacific botany professor and expert on California onions, feels that grazing generally is not a problem for most California species of the genus. If evidence of negative impacts from grazing are observed (e.g., a pattern of plants that have been clipped by herbivores for instance), then systematic monitoring for impacts should be undertaken. If observation alone appears to show clear indications that the grazing is having a negative impact, the parcel should be surveyed and fenced. However there should be provisions for monitoring after any such change in management, to allow for the resumption of grazing if unanticipated negative effects from the removal of grazing appear.

Lands

Authorize no actions for this parcel that might have a negative impact on *Allium jepsonii*. Probably because of the size of this parcel, no actions have been proposed in the last 12 years, and none are anticipated.

Wildfire, Fire Suppression

The *Allium jepsonii* site atop Table Mountain in Tuolumne County has shallow rocky soils that support almost exclusively herbs. Fires in this fuel type are likely to travel fast and burn quickly and because of short duration, cause little deep heating of the soils below the surface. The bulb of *Allium jepsonii* is likely to be unaffected by most fires.

Discuss with CDF the inclusion of the small parcel (8 acres) that BLM manages atop Table Mountain that supports *Allium jepsonii*, in modified suppression plans. It would be desirable to have a modified suppression plan that included the avoidance of: (1) vegetation clearing by tractor work, and (2) the application of chemical retardants that include fertilizer. For CDF it may be administratively difficult to have modified suppression plans for such small parcels. The discussion should include modifying suppression for the rest of the population of *Allium jepsonii* which occurs mostly on private land, although such an extension would probably need the ratification of affected private landowners as well as CDF.

Allium tuolumnense

Proposed Action

Objective

To manage the Rawhide Hill onion populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. Extend the Red Hills ACEC (or establish one or more additional ACECs) so that additional populations of Rawhide Hill onion, along with other associated rare serpentine species, are given an increased level of protection. Areas to be considered for inclusion include the Red Hills east of Don Pedro Reservoir, Rawhide Hill, Priest Grade and Woods Creek.
2. GPS known populations of the species as a baseline for monitoring. Because more than 65 occurrences or suboccurrences (separate mappable units within ¼ mile of other mappable units of the same species; such units in close proximity are lumped together by CNDDDB into a single numbered CNDDDB occurrence) have been sketch-mapped in the Red Hills alone, this GPS workload will be substantial.
3. Once a GIS baseline is established, choose specific occurrences for monitoring, based on potential threats in the area of the occurrence.

Species Specific Avoidance of Adverse Impacts

General

Because of their growth form, onions are often less susceptible to disturbance than many other species. Because their perennating organ is protected by soil and rock, and often most of their reproduction is asexual and subterranean, onions can withstand many kinds of surface disturbance. This species, because it completes its above-ground seasonal life cycle by May or June, also avoids impacts from surface activities in summer and fall.

The serpentine habitats where this species grows are rocky and infertile and have little economic value. Therefore demand for potentially impacting activities in this habitat is low, relative to demand in other ecosystems.

Grazing

Grazing has little impact on most onions (McNeal, pers. comm., 2004). Observations of the plants growing in grazing leases shows little if any clipping of plants by herbivores.

Mining

Under the 1872 mining law, mining can occur almost anywhere on public lands, unless the lands are specifically withdrawn from mineral entry. In the Red Hills ACEC, an operator would have to file a Plan of Operations and have it approved by BLM, before he could use heavy equipment to mine. BLM would not approve a Plan of Operations that could cause significant impacts to a sensitive species. In areas without ACEC status, e.g., Rawhide Hill onion habitat at Rawhide Hill, Woods Creek and New Priest Grade, only a notice from the operator to BLM is required. However BLM has 15 days to respond before operations begin, and usually we can work with the operator to limit environmental damage.

Lands

An existing 200 acre lease for a target shooting area in the Red Hills to a black powder organization was considered for patent (transfer into private ownership) in 1995. Intensive surveys found substantial populations of Rawhide Hill onion within the lease area. A patent was eventually granted. The area of the patent was scaled back from 200 acres to 62.5 acres and the shape of the patented parcel was drawn so that BLM would retain over 90% of the *Allium tuolumnense* plants that were growing in the original lease area, as well as other significant rare plant habitat.

The 1985 Red Hills plan states, "Protect 95 and 100 percent of the habitat of Rawhide Hill onion from discretionary surface disturbance in the IUZ [intensive use zone] and RUZ [restricted use zone], respectively. The restricted use zone was a precursor of the Red Hills ACEC, which was originally 4500 acres. The intensive use zone was a 2600 acre area, envisioned at that time as an area where recreation like OHV activity, and conservation, were to coexist. Experience with this management strategy showed that the degree of control of recreational use needed to permit conservation in the IUZ, was not attainable. A plan revision in 1993 eliminated the IUZ concept, and transferred the acres that had been in the IUZ to the Red Hills ACEC. Therefore our current plan calls for 100% of Rawhide Hill onion habitat in the Red Hills ACEC to be protected from discretionary surface disturbance.

Arctostaphylos nissenana

Proposed Action:

Objective

To manage the Nissenan manzanita population that occurs on Bureau of Land Management administered lands in Tuolumne County, so it remains viable and stable. This is a disjunct population; all other known populations are in El Dorado County.

Species Specific Goals

1. Finish GPS work started in 2002 to delineate population boundaries.
2. Arrange for testing of the susceptibility of the species to the fungal root disease, *Phytophthora cinnamomi*. Such testing might be coordinated with US Forest Service, because they manage many populations of the species.
3. If testing indicates susceptibility to *Phytophthora cinnamomi*, develop a plan to prevent spread of the fungus to BLM managed population.

4. Work with Columbia College to learn more about their previous work on the species. Unless and until the species is shown to not be susceptible to *Phytophthora cinnamomi*, work with Columbia College biology department on measures to prevent disease spread that could result from their work in the area. No work should be allowed during the wet portion of the year when the pathogen is most easily spread.
5. Work with CDF to assure that there is good awareness of the need for modified suppression in the area of the ACEC (see avoidance below).
6. This species population is protected within a designated Area of Critical Environmental Concern, which will be called here the Nissenan Manzanita ACEC. (In the designating document, the 1988 "Folsom Resource Area Sierra Management Framework Plan Amendment (MFP)", the conserved species is called by a different common name -El Dorado Manzanita- and the ACEC itself is left unnamed.) Write an ACEC management plan. Up to this point a management plan for the ACEC has been relegated to a low priority, because the population is healthy, and it is protected from most impacts because of its location.

Species Specific Avoidance of Adverse Impacts

General

If experimental trials indicate that Nissenan manzanita is susceptible to *Phytophthora cinnamomi*, institute measures to prevent spread of the disease. These measures should include at a minimum a policy of no public access during the wet season, and no soil movement onto the parcel at any time of year. Wet season administrative access should be minimized, and should incorporate hygiene measures, like cleaning boots and the use of 70% isopropyl alcohol to decontaminate boots before entering the parcel. To prevent soil movement onto the parcel, no equipment should be allowed to enter the parcel without complete cleaning beforehand, e.g., a power wash followed by inspection.

Wildfire

Besides disease, fire suppression may be the greatest single short-term threat to the species. The Nissenan manzanita community itself is a brush community that would carry a fire, although compared to other brush communities, fuel loading is low. However surrounding the pure Nissenan manzanita stand are very dense brush and tree stands with high fuel loading. Development is occurring on some of the ridges adjacent to the ACEC, meaning that a fire at the ACEC will threaten homes. And of course Sonora is right below the ACEC. CDF will fight any wildfire around the ACEC very aggressively. Tractor line construction could wipe out a large portion of the *Arctostaphylos nissenana* population. Not only would tractor operations kill plants (this species does not have a burl and presumably does not sprout) but it might alter the surface of the substrate to make it less favorable for *Arctostaphylos nissenana* and more favorable for competing vegetation including invasive species. Equipment might bring in weed seed. And possibly most important, the tractor work, by eliminating fire effects, may prevent *Arctostaphylos nissenana* seed from being stimulated to germinate. The present stand probably began as seedlings that followed the Rotelli fire of 1963 (Gankin 1983). The use of retardant to slow a fire can also alter the competitive balance among plant species. Because most retardant slurries contain as much as 10% ammonium phosphate fertilizer, the post-fire environment where retardant is dropped will be hospitable to a much wider range of plant species, including weedy species. Many common species including weedy species are normally suppressed by the naturally infertile substrates on which *Arctostaphylos nissenana* grows. Hand line construction will kill individual plants, but will not disturb the soil to nearly the same extent as tractor lines. And generally hand line construction will affect a much smaller area, because hand lines are much narrower than tractor lines.

Wildfire by itself could produce complete stand replacement. This species lacks a burl, so individual shrubs will not resprout after a fire. But there is evidence that the species regenerates from seed after fire, so a single wildfire itself is not likely to be injurious to the population. Successive wildfires, with a short interval between fires, could result in the depletion of the seed bank. If the second fire occurs before the new cohort of plants growing up following the first fire has had sufficient time to mature and produce the seed needed to restock the seed bank, there may not be enough seed to replace the plants killed by the second fire.

Mining

Because the *Arctostaphylos nissenana* population is in an ACEC, all mining beyond casual use will require a Plan of Operations. This affords the population a degree of protection, because BLM has authority to reject a Plan of Operations because of environmental impacts. However BLM cannot completely preclude the opportunity to mine granted under the 1872 Mining Law.

Balsamorhiza macrolepis macrolepis

Proposed Action:

Objective

To manage the big scale balsamroot populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. GPS populations that have previously only been paper-mapped.
2. Continue surveys along the ridge of Hunter Mountain for additional occurrences.
3. Monitor using repeated GPS mapping to verify the stability of populations.
4. Monitor for the movement of weed species into the habitat of *Balsamorhiza macrolepis macrolepis*. If new weed infestations are discovered, monitor effects of weed competition on big scale balsamroot.

Species Specific Avoidance of Adverse Impacts

Grazing

Most of the habitat of *Balsamorhiza macrolepis macrolepis* is included in one large grazing lease (Hunter Valley, #04210, Griffith). One small occurrence occurs on the adjacent lease (Visser, #04181). Grazing at the levels that have historically occurred at Hunter Valley Mountain appears to be compatible with healthy populations of *Balsamorhiza macrolepis macrolepis*. Plants in grazed pastures do not appear clipped or otherwise impacted. Populations appear healthy.

Fuels Reduction

A prescribed fire program was attempted on Hunter Valley Mountain during the 1990's. Attempts to burn units primarily on the east slope of the mountain during several fall seasons resulted in only a small acreage burned. Often repeated ignitions would not produce a sustained fire. Then in summer of 2000 virtually the whole mountain burned in the Hunter burn. Bear Valley is one of only a small number of very small communities (hamlets) that are at risk from a fire on the mountain. It is unlikely that prescribed fire will be used extensively in the future; certainly there will be no need for prescribed burning in the immediate future.

Observations of a population that burned in the wildfire of 2000 indicate that the species withstood that burn without ill effects. Because it grows surrounded by a chaparral community that is prone to wildfire, it would be surprising if the species were unable to tolerate periodic fires.

Wildfire

Fire suppression could impact this species. However there are many subpopulations spread over a large area, and it is unlikely that suppression efforts would affect a large proportion of plants. A modified suppression plan does not seem appropriate.

There appears to be little mining interest in Hunter Valley Mountain.

Chlorogalum grandiflorum

Proposed Action

Objective

To manage the Red Hills soaproot populations that occur on Bureau of Land Management administered lands so that they remain viable and stable

Summary Information on Status of Red Hills soaproot on BLM Land

Given current information, overall management of Red Hills soaproot on BLM lands can be summarized in this way:

1. BLM manages land that supports over 500,000 plants of this species. This figure is supported by mapping and sampling done in the Red Hills in 1983 by BioSystems Analysis Inc.
2. The great majority of these plants grow in areas that BLM has designated for ecosystem protection, either in the Red Hills ACEC or in the Pine Hill Preserve.
3. The Red Hills ACEC will be extended, affording protection to additional habitat of this species.
4. Red Hills soaproot is relatively common and widespread when compared to other special status species. BLM should continue to collect and share occurrence information. With additional information supplied by BLM and other agencies (USFS for instance), CNPS may determine that its current List 1B status is not warranted. If BLM continues to find additional occurrences, and CNPS does not take action, there exists the option of presenting evidence to the State Director to support removing the species from BLM sensitive species list if that is appropriate.

Species Specific Goals

1. Manage populations within the existing Red Hills ACEC and the Pine Hill Preserve for the conservation of this species and the entire ecosystems of which the species is a part. (See the Red Hills Section and the Pine Hill Preserve Section of the conservation strategy.)
2. Conserve this species where it occurs on substrates other than serpentine and gabbro. Often these are sites with ponderosa pine or white leaf manzanita dominant, and found at higher elevations than the serpentine and gabbro occurrences.
3. Work with Indian Grinding Rock State Park if they move forward with a planned prescribed burn of BLM land adjacent to the park, to investigate the impact of prescribed burning on Red Hills soaproot.
4. Work with Indian Grinding Rock State Park if they acquire adjacent BLM land with Red Hills soaproot, to address management of the species.

5. Afford similar protection to other serpentine areas in Tuolumne County with a flora similar to that found in the Red Hills, either by including such areas within the Red Hills ACEC, or by flagging those areas for conservation management. Candidate areas include Rawhide Hill, Woods Creek, Peoria Basin, and the extension of the Red Hills east of Don Pedro Reservoir.

Species Specific Avoidance of Adverse Impacts

Lands Actions

BLM occurrences of Red Hills soaproot that are found on more common geologic substrates, rather than serpentine or gabbro, are subject to pressures for economic uses. These parcels have more fertile soils and are often forested. The public land parcels where these occurrences are found are often small and isolated. Proposals for the use of such parcels (usually from private citizens) include timber harvest, fuels reduction, exchange for residential development. Three such parcels of BLM land with Red Hills soaproot have been affected by land exchanges. Two parcels were exchanged in their entirety. A portion of the third parcel was exchanged to settle a trespass, with the remainder of the parcel retained to conserve a portion of the soaproot population. Plants were salvaged from the exchanged portion. BLM continues to manage at least 7 populations of Red Hills soaproot that grow in association with similar plant communities.

Grazing

Grazing occurs on approximately 1200 acres of the Red Hills ACEC; approximately 17% of the ACEC. About 900 acres is potential Red Hills soaproot habitat (judging from soils and associated species). No grazing occurs on the rest of the ACEC. Red Hills soaproot is well distributed throughout the Red Hills. One other Tuolumne County parcel that supports a small population of Red Hills soaproot is included in a grazing lease. A portion of a different grazing lease that once included Rawhide Hill and a population of Red Hills soaproot, was cancelled in 2000. The Red Hills soaproot population known from east of Don Pedro Reservoir is not grazed. The extensive populations of Red Hills soaproot in the Pine Hill Preserve in El Dorado County are ungrazed. Also BLM populations of Red Hills soaproot found on substrates other than serpentine and gabbro are not grazed.

An unreplicated study in the Red Hills of grazing impacts to Red Hills soaproot indicates that cattle grazing has an impact. During the study more leaves were clipped in the grazed area than in the ungrazed area. And even those leaves that were not clipped averaged shorter in length where grazing occurred, presumably because entire plants were affected when a portion of the leaves were grazed. There were more plants per unit area in the ungrazed area, and the difference increased over the course of the study. Because the unreplicated nature of the study, site differences may have played a role in the outcomes observed. BLM will not issue new grazing leases for lands supporting Red Hills soaproot unless new monitoring establishes that grazing does not have a negative impact to the species.

Clarkia biloba australis

Proposed Action:

Objective

To manage the Mariposa clarkia populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. GPS populations that have previously only been sketch-mapped. Most populations that have been recorded occur along Highway 140 or the Merced River Trail.
2. Many of these occurrences have been mapped linearly (along the highway or trail), but their upper or lower extents are unknown. No one has climbed the steep canyon walls to do this work. This work would give some useful information, but it should be a low priority. As a basis for monitoring it would be of limited usefulness, because of the difficulty of repeating the procedure.
3. Regularly monitor occurrences by geographic extent to assess the stability of the population. Until there is evidence of decline, monitoring should be at long time intervals (for instance 10 years---see "Monitoring" below). Windshield observation of greatly reduced numbers of plants (or the absence of plants) in successive years (especially if there has been no unusual weather that might account for low numbers) should trigger additional monitoring.

Species Specific Avoidance of Adverse Impacts

General

Most of the activity in the Merced River Canyon occurs just above river level where roads and trails and the river itself make access easy. Impacts to *Clarkia biloba australis* at the base of the canyon are likely, due to road and trail maintenance work and recreational use for instance. The species favors disturbed areas and other poorly vegetated sites, and it can be found on road edges, cut banks and fill slopes. Effort expended trying to control these impacts is not well spent. Although road/trail maintenance activity may wipe out plants and remove seed, it generally produces new potential habitat (bare soil) that can be reinvaded by *Clarkia biloba australis* from adjacent seed sources. Foot traffic is likely to have similar effects.

If ground or vegetation disturbing activities that will affect *Clarkia biloba australis* habitat can be timed to occur between August and November, and if the activities do not involve substantial movement of soil, effects on the species may be minimal. During that season the species exists as a seed bank, so if the seed bank condition is not substantially altered (e.g., removed, buried too deep, etc.) the next year this annual should return.

Although there is a great deal of activity in the lower canyon where most *Clarkia biloba australis* occurrences have been mapped, the species is not confined to this zone, and many plants occur beyond the reach of these activities.

Recreation

Recreation activities, especially river rafting, trail travel (hiking and mountain biking mostly) and car camping, occur mostly in the canyon bottom. There are developments in conjunction with these activities; boating put-ins and take-outs, parking and camp sites. New recreational developments will be evaluated for impacts to *Clarkia biloba australis* before construction. Maintenance of the existing infrastructure will not be limited if it impacts some plants of this annual species.

Road Work

Herbicides are being applied to the roadside of Highway 140 by CalTrans. A 1994 MOU signed by Caltrans, BLM, USFS and PG&E established guidelines for spraying along the highway from the Bear Creek Bridge to El Portal. Spraying is limited to 8' from the pavement edge, except for site-specific brush removal which can

extend to 12' from the pavement. Two ¼-mile no-spray zones were established for monitoring *Clarkia biloba australis*. CalTrans marked these zones with paddles, and their herbicide applicators have been instructed to avoid these zones. Initial observations did not find problems in terms of herbicide drift, or spray in restricted areas. Virtually all vegetation, including *Clarkia biloba australis* evidently, was killed in the spray zones.

Weed Control

There are proposals to spray Transline to control yellow starthistle (YST) in the Merced River Canyon. If such spraying occurs on BLM land, occurrences of *Clarkia biloba australis* will be excluded, unless it is shown that these three conditions all apply: (1) YST is negatively impacting specific *Clarkia biloba australis* occurrences, (2) manual methods of removing YST are impractical in specific instances (for instance it might cause too much disturbance to *Clarkia biloba australis* plants) and (3) it is definitely determined that Transline can be applied with no negative impact on *Clarkia biloba australis*, which would be consistent with published reports of the herbicide's action spectrum. Undoubtedly this will only be established if BLM, or another agency with land in the Merced River canyon, undertakes an experimental program of Transline spraying, with accompanying monitoring of impacts to Mariposa clarkia.

Clarkia rostrata

Proposed Action

Objective

To manage beaked clarkia populations on BLM lands so that they remain viable and stable.

Species Specific Goals

1. GPS populations that have previously only been paper-mapped. Survey other BLM ground with similar habitat conditions.
2. Regularly monitor occurrences by geographic extent to assess the stability of the population. Until there is evidence of decline, monitoring should be at long time intervals (for instance 10 years—see Monitoring below). Observation of reduced numbers of plants (relative to previous observations) in successive years (especially absent unusual weather that might account for low numbers) should trigger additional monitoring.
3. If grazing is suspected of negative impacts on an occurrence of the species, compare the grazing regime at that occurrence with the grazing regimes on lands supporting vigorous populations of *Clarkia rostrata*, like lands surrounding Lakes McSwain and McClure. If appropriate, adjust the grazing regime to resemble the grazing of pastures where stable viable populations of the species occur. Monitoring the population before and after the change should accompany any adjustment of grazing intended to benefit the species.

Species Specific Avoidance of Adverse Impacts

General

If ground or vegetation disturbing activities that will affect *Clarkia rostrata* habitat can be timed to fall between August and November, and if the activities do not involve substantial movement of soil, effects on the species may be minimal. During that season the species exists as a seed bank, so if the seed bank

condition is not substantially altered (e.g., removed, buried too deep, etc.) the next year this annual species should return.

Grazing

Cattle grazing is the main land use occurring in the blue oak savannah habitat of *Clarkia rostrata*. BLM has several grazing leases in *Clarkia rostrata* habitat. Observations of those leases and especially adjacent private land show a clear pattern of *Clarkia rostrata* populations persisting in grazed situations. In fact some very extensive and dense populations of *Clarkia rostrata* occur on cattle ranches in the vicinity of Lake McSwain and Lake McClure. (Some of this grazed land may be managed by the Merced Irrigation District also.) On the other hand fenceline effects have been observed where one pasture displays more *Clarkia rostrata* than adjacent grazed pasture. Clearly grazing is compatible with the species, but the timing and intensity of grazing may influence effects on *Clarkia rostrata*.

Cryptantha mariposae

Proposed Action:

Objective

To manage Mariposa cryptantha populations on BLM lands so that they remain viable and stable.

Species Specific Goals

1. Work with the landowner east of BLM parcel north of Copperopolis, so that no further roadwork will occur without BLM supervision.
2. Conduct surveys of the serpentine habitat along the Bagby Grade for *Cryptantha mariposae*.
3. Conduct surveys in the Red Hills for *Cryptantha mariposae*.
4. Conduct surveys on Rawhide Hill for *Cryptantha mariposae*.
5. If necessary, investigate the installation of physical barriers, fencing or other means, to prevent vehicles or equipment from impacting the plants close to the road through the parcel north of Copperopolis.

Species Specific Avoidance of Adverse Impacts

Land exchanges

The only confirmed population of *Cryptantha mariposae* on BLM land sits on a parcel that was considered for a land exchange. When the population was discovered during a field survey preliminary to writing the environmental assessment, the boundaries of the land exchange were adjusted. The proposed 120 acre exchange was reduced to 80 acres. BLM retained the 40 acres that contained all of the significant rare plant habitat (other sensitive species were found as well).

Road Work

A road through the 40 acre parcel near Copperopolis that supports *Cryptantha mariposae* has been maintained by a private party without authorization. BLM will try to ascertain the parties involved and prevent any further unregulated work of this kind that could pose a definite threat to *Cryptantha* plants close to the road.

Grazing

A number of reports of sightings of *Cryptantha mariposae* refer to Highway 49 north of the Merced River. None of these are geographically specific. Occurrences of *Cryptantha mariposae* may occur on the serpentine within the Guisto grazing lease east of Highway 49. Because the growth form of the plant is small and bristly, it would not be expected to be preferred cattle forage.

Horkelia parryi

Proposed Action

Objective

To manage the Parry's horkelia populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. GPS all populations of *Horkelia parryi*. (All current data is in the form of paper maps). Survey other appropriate habitat especially in Calaveras and Mariposa counties (North Fork Merced River drainage).
2. Provide updated maps of plant habitat along Timbrush fuelbreak to the California Department of Forestry (CDF) for use when they do maintenance on the fuelbreak.
3. Monitor selected occurrences along Timbrush fuelbreak for long-term vehicle and equipment impacts. Timbrush fuelbreak gets substantial off-road vehicle use from a staging area established by U.S. Forest Service.
4. Protect a portion of the habitat of the species along Timbrush fuelbreak from vehicle and equipment impacts, if Timbrush fuelbreak is maintained as an off-road vehicle area, and monitoring reveals a downward trend for the species locally. Continue monitoring and use adaptive management in response to monitoring data.

Species Specific Avoidance of Adverse Impacts

General

Seasonal avoidance of impacts to above-ground portions of this species is not easy to accomplish because *Horkelia parryi* has no clear cut dormant season, distinguishing it from many other herbaceous perennials in the Sierra Nevada foothills. Plants support above-ground foliage most of the year. On the other hand the below-ground woody rhizomes of this species are robust, so damage confined to the above-ground portion of plants is unlikely to kill whole plants. Vegetative reproduction also allows this species to recover from some forms of damage.

Timber Sales

Timber sales have occurred in forested *Horkelia parryi* habitat. Roads, skid trails, landings and slash piles are likely to have the biggest impact on the species and should be placed to avoid the species. Heavy equipment travel may also have damaging effects, especially with increasing soil moisture and corresponding compaction. If the species can not be avoided entirely, the sale should be scheduled when soils are dry. Complete avoidance is the preferred alternative.

Fuels Reduction

Fuels reduction can favor *Horkelia parryi*, by reducing light competition from overstory shrubs. Even some areas once bladed by a caterpillar tractor are observed to support the species. Deep blading that displaces rhizomes will negatively affect the species, at least for the short term. Fuels reduction by manual means (for instance chain saw) is the preferred alternative. The species is likely to tolerate mastication using equipment with minimal ground pressure. If such a project is undertaken, monitoring should be used to assess impacts.

Grazing

Horkelia parryi usually occurs associated with chaparral or open ponderosa pine forest. Especially for the most common habitat, chaparral sites on ridge tops, grazing usually is not occurring, even when habitat is included in the administrative boundary of grazing leases. Evidence of grazing effects to *Horkelia parryi* has not been observed, but this may be due to cattle having little access to the habitat. Potential new grazing leases with *Horkelia parryi* habitat should only be considered if monitoring is established as part of the lease, and the lease is initially granted on a year-to-year basis, to permit adaptive management in response to monitoring.

Lomatium congdonii

Proposed Action:

Objective

To manage the Congdon's lomatium populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. Retain the public land where Congdon's lomatium occurs, even the small parcels in Calaveras County north of Copperopolis and at Carson Hill.
2. Afford similar protection to other serpentine areas in Tuolumne County with a flora similar to that found in the Red Hills ACEC, either by including such areas within the Red Hills ACEC, or by flagging those areas for conservation management. Candidate areas include newly acquired lands adjacent to the Red Hills ACEC, the Red Hills east of Don Pedro Reservoir and Peoria Basin.
3. Conduct a survey to establish the boundaries of the public land where the Carson Hill population occurs. This small population may straddle a public-land private-land boundary.
4. Coordinate management of lands in Peoria Basin with the Bureau of Reclamation. The two agencies have adjacent lands that support the species.

Species Specific Avoidance of Adverse Impacts

Land Exchanges

Land acquisitions over the last 15 years have added new *Lomatium congdonii* habitat to BLM lands in the Red Hills. Land supporting substantial *Lomatium congdonii* will not be transferred out of BLM ownership. One potential exception is the possibility of the transfer of lands between BLM and the Bureau of Reclamation

(BOR) in the Peoria Basin area. BOR has a larger presence in the vicinity of New Melones Lake and may be able to better manage these parcels. However BLM will only make this transfer if it feels that the special status species involved like *Lomatium congdonii* will receive appropriate (and perhaps superior) management.

Grazing

Only one grazing lease, the Poor Man's allotment in the Red Hills, supports a substantial population of *Lomatium congdonii*. Maintain the current grazing regime there that has allowed the species to persist. No new grazing leases should be authorized in the habitat of *Lomatium congdonii*.

Mining

Most but not all BLM *Lomatium congdonii* sites will be included in the Red Hills ACEC if proposed additions to the ACEC are carried through the RMP. These sites will have the protections from mining impacts afforded by the requirement for the filing of Plans of Operations before mechanized mining proceeds. For those areas without ACEC status, e.g., Carson Hill and the site north of Copperopolis, BLM will work with operators when they file Notices, to avoid impacts to the habitat of *Lomatium congdonii*.

Fuels reduction

No *Lomatium congdonii* occurrences are close to development, so it is unlikely that they would be considered for fuels reduction in the foreseeable future.

Lupinus spectabilis

Proposed Action:

Objective

To manage the shaggyhair lupine populations that occur on Bureau of Land Management administered lands so that they remain viable and stable

Species Specific Goals

1. Designate the Bagby Serpentine ACEC to provide management emphasis on maintaining the serpentine habitat of shaggyhair lupine and the plant community of which it is a part. If adopted, this ACEC will encompass much of the serpentine body between Coulterville and Bagby along Highway 49.
2. Determine if shaggyhair lupine does occur in the Red Hills
3. If the species does occur in the Red Hills, get baseline information about its distribution
4. GPS populations that have previously only been paper-mapped.
5. Continue surveying for Shaggyhair lupine on serpentine habitat in Tuolumne and Mariposa counties.

Species Specific Avoidance of Adverse Impacts

Mining

All known BLM occurrences of shaggyhair lupine will fall within the Bagby serpentine ACEC if it is adopted. With ACEC status these sites will have the protections from mining impacts afforded by the requirement for

the filing of Plans of Operations before mechanized mining proceeds. Some mining activity has occurred in the core area of the distribution of shaggyhair lupine. Projects should be adjusted to avoid habitat whenever possible. If projects occur in habitat areas, reclamation should be adjusted to match the habitat requirements of this species. For instance, raw serpentine tailings make good habitat for this species.

Fuels reduction

Lupinus spectabilis often occupies ridgetop locations with rock outcrops of serpentine. These locations are conducive to the creation of fuelbreaks. Ridgetops that support shaggyhair lupine should only be considered for the construction of fuelbreaks, if the fuelbreaks can be constructed without negatively affecting habitat. Because *Lupinus spectabilis* habitat supports so little vegetation, there may be opportunities clear vegetation between habitat areas, and leave undisturbed relatively barren *Lupinus spectabilis* habitat to function as part of the fuelbreak.

Road Maintenance (including herbicide treatments)

Lupinus spectabilis occurs in many locations along Highway 49. This is a major highway that receives a large amount of use and therefore requires frequent maintenance. BLM should work with Cal Trans to avoid disturbance to known populations. Any new occurrences found along Highway 49 should be reported to Cal Trans.

Grazing

Lupinus spectabilis occurs on serpentine in the Guisto grazing lease east of Highway 49 north of the Merced River. This species has persisted and appears to have remained stable with a long history of grazing. Occurrences of the species on the west side of Highway 49, which is ungrazed, appear similar.

Senecio clevelandii heterophyllus

Proposed Action

Objective

To manage Red Hills ragwort populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

1. Bring additional habitat for the species into the protection afforded by ACEC status by including lands east of Don Pedro Reservoir in the Red Hills ACEC.
2. Stimulate interest in research to examine the taxonomic relationship between Coast Range and Sierran populations of *Senecio clevelandii*. Genetic studies would be particularly useful in this regard.
3. Pursue acquisitions of habitat for *Senecio clevelandii heterophyllus* in conjunction with the acquisition of habitat for *Verbena californica*.

Species Specific Avoidance of Adverse Impacts

Recreation

Trails in the Red Hills have been designed to avoid habitat of *Senecio clelandii heterophyllus*. These trails are mostly used by horse riders. Additional trail work should also avoid the species.

Road work

Road improvements in the Red Hills (2004) have been designed to avoid direct impacts to *Senecio clelandii heterophyllus*. For instance lead-off ditches were located away from plants of this species. A primary impetus for the road work is to reduce sedimentation into Horton Creek from the road that parallels it. The reduction in sedimentation should benefit the Red Hills roach, a minnow with important summer habitat in pools along Horton Creek. Horton Creek also supports a substantial occurrence of *Senecio clelandii heterophyllus* that may also benefit from reduced sedimentation.

Road maintenance work done by the San Francisco Water and Power might affect *Senecio clelandii heterophyllus* plants that lie adjacent to their service road for their facilities on the east side of Don Pedro Reservoir. Because this is a riparian species, it is unlikely plants would establish on the road itself. Signage and coordination with San Francisco Water and Power can reduce the probability that damage will occur during road maintenance.

Grazing

Grazing occurs in *Senecio clelandii heterophyllus* habitat in the area east of Don Pedro Reservoir, in the Engler grazing lease. A portion of the *Senecio clelandii heterophyllus* population lies along a creek along a major road to a Hetch Hetchy facility. Cattle sign indicates that this road gets substantial livestock use. Nonetheless the ragwort plants in this area look largely ungrazed. Upstream on some of the tributary drainages that also support *Senecio clelandii heterophyllus*, there are reaches that cattle probably did not access because they were surrounded by thick brush. Ragwort plants along these isolated reaches looked similar to those observed in more accessible areas. The Pedro Fire of the summer of 2006 burned off most of the surrounding brush and leaves these previously isolated plants more vulnerable to grazing. However observations of grazing on private land in the Red Hills also indicates that *Senecio clelandii heterophyllus* is rarely taken by cattle under normal grazing conditions. This species will be monitored inside the burn perimeter in the spring of 2007.

Wyethia reticulata

PROPOSED ACTION:

Objective

To manage El Dorado mules ear populations that occur on Bureau of Land Management administered lands so that they remain viable and stable.

Species Specific Goals

The Draft Recovery Plan for Gabbro Soil Plants of the Central Sierra Nevada Foothills (Tarp, 1998) lists the following goals for protecting gabbro soil plants in general:

1. Stabilizing and protecting populations
2. Protection and management of habitat
3. Surveying and monitoring
4. Research
5. Public participation, outreach, and education

A further goal:

6. BLM portions of the Pine Hill Preserve become an ACEC.

The specific goal for the conservation of *W. reticulata* in the recovery plan is to protect five dense populations in each of at least three non-contiguous preserves within the southern and central zone, as well as adjacent unoccupied habitat that can be managed through controlled burns to support this plant in the future" (Tarp, 1998).

The Pine Hill Preserve Management Plan (currently being written) will further define management actions at the Preserve for the conservation of all of the listed and sensitive species that occur there. (Also see the Pine Hill gabbro species portion of the Listed Species Conservation Strategy, for actions relevant to *Wyethia reticulata*.)

Species Specific Avoidance of Adverse Impacts

Land Exchanges

Virtually all of BLM land supporting *Wyethia reticulata* lies in the Pine Hill Preserve. Most of this land supports a suite of rare species, including 5 federally listed species. BLM manages these lands in coordination with 8 other agencies and groups for the conservation of the species and the plant communities. The small amount of land outside the Preserve that supports the species lies in the South Fork American River planning area. A detailed community based plan adopted in 2004 states that none of this land will be transferred out of public ownership.

Grazing

There are no grazing leases in the habitat of *Wyethia reticulata*.

Fuels Reduction

Fuels reduction will be conducted as part of the management of the Pine Hill Preserve. Conservation of the rare species of the Preserve, including the local endemic *Wyethia reticulata*, is the focus of the Preserve. Avoidance measures will be incorporated whenever feasible. When mastication for fuels reduction with a rubber-tracked tractor first occurred in spring 2005, monitoring of impacts to *Wyethia reticulata* was included as a part of the project. Because of the rhizomatous growth form of *Wyethia reticulata*, the species appears to regenerate after some forms of injury to its above-ground parts (e.g., fire). First-year monitoring in 2006 indicated some negative impacts of tractor travel over plants. Whether this impact is short term or long term will be the subject of ongoing data collection.

Appendix C. Timber Harvest Criteria

The following timber harvest criteria have evolved from the several approved community based planning efforts by the Folsom Field Office.

- A. Identify timber management areas. The forest and woodland acres are identified in BLM intensive and extensive inventory systems. These are being added to and updated as specific management areas are identified under community based planning such as 'Inimim, Round Mountain, and Iowa Hill Forest Plans.
- B. Communicate and coordinate with outside government agencies, private organizations, citizens, and internal resource personnel to produce a viable, well informed forest and woodland management program. This cooperation and coordination is especially necessary while planning and budgeting the fuels/fire programs.
- C. Manage for old growth forests and factors.
- D. Follow BLM standards for environmental analysis on forest and woodland projects.
- E. Reflect a philosophy of 'no new road construction' for management actions that concern roads and access. Use only existing roads and trails. On a case by case basis where justifiable needs for new construction or reconstruction may be needed, it should be held to a minimum (usually less than 100 feet). As additional community based plans come forward, specific road and access plans may be developed giving detailed specifics on retention and non-use, or rehabilitation/obliteration. Adjacent land owners and other users of these forest roads should be encouraged to obtain proper legal rights.
- F. Where applicable, follow the appropriate BLM rules and regulations on valid mining claims filed prior to 1955. There are very few of these in the Folsom Field Office area, and in most cases would present no problem. The vast majority of claims are covered by the Surface Resources Act (Public Law 167), which provide the U.S. with the means to manage vegetative and other surface resources.
- G. Riparian Protection – Maintain a protection policy of 150 feet on each side of perennial streams, 75 feet on each side of intermittent streams (those partially dry during summer seasons but show a scoured channel), and 75 feet around meadows and/or other areas having unique characteristics.
- H. Exclude any spraying or application of biochemical products such as herbicides or insecticides for forest or woodland management. Future consideration of chemical application will be on a case-by-case basis, subject to public scoping and environmental analysis.
- I. Utilize commercially valued vegetative products where forest structure changes are needed for forest or woodlands improvement, such as thinning for fire hazard reduction. Such sales shall follow BLM standards for vegetative contracts and sale of timber.
- J. Methods of Fuels Reduction – Choose the safest, most effective, least intrusive, and lowest cost method (e.g., use of fire, mechanical, and herd management) that meets fuels reduction goals for a specific project or area.
- K. Reforestation – Use natural reforestation where possible. If artificial means are required in case of fire or forest rehabilitation, plant diverse, native species. Use appropriate seed-zone specific nursery stock.
- L. Use the following harvest method criteria:
 - 1. Do not clear cut.
 - 2. Salvage dead and dying trees from areas devastated by natural causes such as insects, disease, and fire.
 - 3. Selection – Thinning and shaded fuel breaks (thinning from below).
 - Remove suppressed or smaller trees beneath the main canopy.

4. Selection – Hazard trees.
 - Remove any tree presenting an imminent danger to human life or private, public, county, state, or federal property.
 - Remove trees within 150 feet of roads.
 - Remove dead trees within any designated fuel break.
 5. Selection – Fuelwood.
 - Limited to five cords for personal use only (no commercial cutting).
 - Authorized by vegetative contract or nonprofit free-use permit.
 - Handled on a case-by-case basis.
 - Limited to dead or downed trees only.
 - Must have legal access.
 - Must be marked or designated by BLM.
 6. Include standard and needed specific stipulations for any harvesting and address in specific contract stipulations any necessary mitigation actions as prescribed in the environmental analysis by other resource disciplines.
 7. Restrict any harvest by ground operation to slopes 40% or less.
- M. Management of Large/Coarse Woody Debris – Because this is not fully understood or defined in terms of what is biologically appropriate in quantity, quality, distribution, and temporal needs, use known and acceptable scientific information as it becomes available. Designate specific allocations as management applications are identified with community based planning. Use naturally dead trees in fulfillment of snag and large/coarse wood debris needs.

